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APRIL, 1881.

THE COMMISSIONER OF AGRICULTURE has favored us with his report for the year 1879, and we thought that some things it contains, just a little of the cream, might be interesting to our readers, and perhaps not without profit. This volume is at least among the most valuable published. Though some of the teachings of a book like this, that necessarily leads the advance, will not bear the test of experience, it is well to call the attention of agriculturists to new enterprises, and what may prove new avenues to wealth and prosperity. House-keepers may feel obliged for the bit of information contained in the following statement of an experiment made to ascertain the effect on cane sugar of cooking it with fruit. It appears that the acid of fruits when cooked with cane sugar, which is the sugar in domestic use, and generally made from the Sugar Cane, changes it to grape sugar, or, as we commonly hear it called, glucose, which is the sugar of fruits. It is a sugar which may be produced abundantly from the juice of sweet Grapes, and from honey, and is extracted in large quantities from Corn, and may be made from cane sugar, starch, and wood-fibre, and is actually so produced unwittingly in domestic practice in cases like the one here related. "Two Russet Apples were pared and sliced, covered with cane sugar and baked for three hours at a rather low temperature. Then determinations were made of the amounts of unchanged sugar ('sucrose') and of inverted sugar ('glucose'). It was found that 60.64 per cent. of the cane sugar had been inverted. This inverted sugar being less sweet, it follows

that to get the full sweetening effect of cane sugar it should be added to fruit after cooking rather than before. It is very probable that all the cane sugar would have been changed to inverted sugar had the Apples been more tart."

POISONOUS PLANTS OF THE PRAIRIES.

Our readers have all heard of the Loco, or Crazy Weeds, of the west, and some have, doubtless, learned of their character to their sorrow, by the loss of valuable stock. "The habit of eating these weeds seems to be formed because of the scarcity, at certain seasons, of nutritious grasses. All, or nearly all, of these plants, except *Oxytropis*, have a bitter, disagreeable taste, yet after the habit has once been formed the animals reject the sweetest grasses. Among the symptoms first noticed are loss of flesh, general lassitude, and impaired vision; later, the animal's mind seems to be affected; it becomes often vicious and unmanageable, and flesh and strength are both rapidly lost. When approaching some small object it will often leap into the air as though to clear a high fence. Frequently in these paroxysms horses have died, falling backward. The time required for these weeds to kill animals varies greatly, some dying within three or four days, others lingering for a year or longer. Some correspondents state that horses seem more susceptible to the influence of these plants than are either cattle or sheep; others report that all are affected similarly."

Of the plants complained of, *Sophora sericea*, ranging from Colorado to New Mexico, is a low

herb, from six to twelve inches high. Its analysis showed, among other principles, an "alkali extract, not nitrogenous," amounting to 4.78 per cent. of the whole plant, roots and top. "The presence of an alkaloid in this plant in appreciable quantity is certain, and the poisonous action upon animals which has been reported is very probably due to the alkaloid chiefly." One item of the analysis is referred to under the title of "Extractives soluble in water and 80 per cent. alcohol," and the remark is made that the other constituents of possibly injurious properties are probably included in these "extractives." "The chances are, however, largely in favor of the alkaloid being the chief constituent of poisonous properties."

Another of the plants, *Astragalus mollissimus*, gave an alkaloid and bitter extractive amounting to 7.89 per cent. of the whole, which it is thought are the substances likely to prove poisonous. "If facilities can be had, a large amount of this plant will be treated, and the alkaloid extracted and examined."

The analysis of *Oxytropis Lambertii* showed the presence of some glucose and sucrose, giving the plant a sweetish taste, "which may account for the preference shown by animals for this weed over the varied grasses grown with it." Besides, there was present "a very small amount of an alkaloid agreeing, so far as examined, with the one present in *Astragalus mollissimus*. From the additional work done at this department, it seems probable that the deleterious effects observed from animals eating this plant may be due principally to the fact that the sweet taste causes cattle to reject more nutritious food, and strive to subsist upon the *Oxytropis* only. This plant is mechanically a very unfit substance for food, being of a tough, fibrous, and indigestible character. It is possible that, when the animal becomes somewhat enfeebled by lack of proper nourishment, the small amount of alkaloid may have a direct poisonous action. Again, it seems probable that the plant may contain a much larger proportion of alkaloid at certain stages of its development than at others, or the seeds may prove to be the most injurious portion."

Most of our readers will recall the case of poisoning reported to have occurred a year and a half since at Pueblo, Colorado, where 1200 sheep died in four hours, after grazing where plants of *Malvastrum coccineum* were growing. Doubts were expressed at the time, by different parties, that the fatality was caused by the *Malvastrum*, but those in charge of the flock were confident that it was due to that source. By the report of the examination of this plant, it appears that it contains "no alkaloid nor any

bitter substance; the only possibly poisonous substances are the resins, and the chances are not greatly in favor of their being injurious. It seems very doubtful whether this herb is at all poisonous in the dried condition; possibly, drying may render it thus inert."

In regard to this whole subject, it is suggested that much light might be thrown upon it "by the observations of a properly constructed commission, which should visit the localities where the loss of animals has been greatest, inquire thoroughly into the matter, and gather specimens at different stages of development for analysis."

INSECTS.

In regard to the Colorado potato-beetle, it is remarked that "encouraging news respecting the increase of the natural enemies of this pest has reached us from several sections during the past year. D. LANDRETH & SONS wrote from Bloomsdale, N. J., June 4, as follows: 'We send you a small package containing four or five potato-bugs infested with an insect enemy new to us. Hundreds of bugs can be found on our farm completely enveloped with swarms of lice. The lice eat up the potato-bug leaving only the shells.' The parasite proved to be a mite, the *Uropoda Americana* of RILEY. Professor RILEY received the mite from Painesville, Ohio, and Poughkeepsie, N. Y., and I have found it common at Ithaca, N. Y. It will probably follow the beetle to all parts of the country infested by it." The ground-beetle, known as *Lebia grandis*, HENTZ, was reported as being common in New York, and active in destroying the potato-beetle.

A yellowish aphid is described that infests Japan Lilies, supposed to have been introduced from Japan with the bulbs.

A parasitic insect on the Cabbage plant louse, discovered by MR. DENISE, of Norfolk, Va., last year, is described.

PROTECTION FROM GRAPE CURCULIO.

The plan of Mr. BATEHAM, of Ohio, of inclosing Grape clusters in paper bags as a protection against curculios and birds seems to be coming into favor. The method is simply to slip a bag of sufficient size over the bunch when the Grapes are one-third grown, and secure it by sticking a pin through the folds at the neck. A slit should be made in the bottom of the bags to allow the water to run out, which otherwise, in case of a storm, would collect and either rot the Grapes or burst the bags. Some growers who have experimented with this preventive praise it in the highest terms, and claim that a much greater perfection is attained at a slight expense. It is also stated that in addition

to being kept free from birds and insects, the bunches thus inclosed are less liable to mildew than those left in the open air.

THE SILK WORM.

The Commissioner states that "during the latter part of the past winter, twenty ounces of imported silk-worm eggs, the majority from Japan, and the rest purchased from reliable French dealers, were distributed among some fifty persons desirous of commencing silk-culture. The reports so far received seem to demonstrate, beyond a doubt, the possibility of the successful culture of silk in almost every part of the country. Unskilled persons have, with the help and advice of the department, in nearly every instance brought a large proportion of the worms successfully to the spinning point. Experiments conducted during April, May, and June, 1879, confirm the opinion that Osage Orange is but little inferior to *Morus multicaulis* as silk-worm food; and the demonstration of this fact necessarily enlarges the possibility of the industry in this country. A correspondent writing from Bengal, India, and who has served an apprenticeship of five years in the business, makes a proposition to the department to transport and acclimate the 'Tusser' silk-worm in the proper latitudes in this country, to the extent of 1000 pounds of cocoons, at a cost of about \$550,000. This species of worm is indigenous to the province of Assam, in Bengal, where the British government is giving much attention to silk culture, and is of a hardy nature and a most prolific spinner."

We are glad to learn that the Osage Orange furnishes proper food for the silk-worm, as this may prevent another *Morus multicaulis* mania, such as swept over the country some fifty years ago, and ended so disastrously. Then everybody was to get rich growing silk, except those who were to do the same thing raising Mulberry trees and selling to their neighbors. Fortunately for the latter, the trees were largely sold before the bubble burst.

THE CHINESE WISTARIA.

This beautiful, hardy, climbing plant apparently finds all parts of this country congenial to it, even thriving in the southern part of Canada. Wherever it is known it is a favorite. In his semi-centennial address before the Massachusetts Horticultural Society, Hon. MARSHALL P. WILDER makes the following statement: "June 9, 1838, W. KENRICK showed *Wistaria Consequana*, which had just been ascertained to be hardy." This was no doubt the first public exhibition of the plant in this country, consequently, it has been here nearly half a century.

Newly transplanted young plants start into growth rather slowly, but when they have become established they will make a great length of stem in one season; in fact, one will often be puzzled to know how to provide for the rapidly growing stems, or how to direct them. For the first few years a great extension of the stem seems a necessity, but afterwards numerous short branches, yearly developed, are evidence of health and vigor. It is one of the most picturesque and fantastic of climbers; it is often seen where it has run up a post of a veranda, and thence been carried by a wire to the eaves, along which it has run with its branches in different directions, clasped a lightning-rod and reached the top of a chimney; there it has stopped, evidently not because it had no higher ambition, but simply because there was nothing higher to climb, and thereafter numerous branches of shorter length serve instead of one continuous growth. The pinnate leaves, of nine to thirteen oblong, lanceolate leaflets, are very handsome, and the graceful, pendulous racemes of light blue flowers, sometimes a foot in length, that are borne in the greatest profusion, the latter part of spring or early summer, render the plant an object of rare and wondrous beauty.

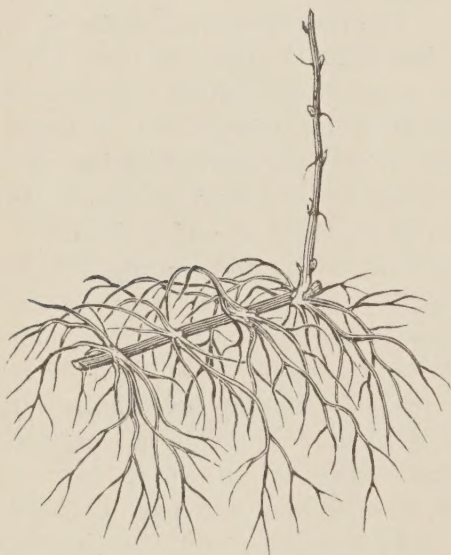
By careful training and leading, the *Wistaria* can be made to cover a very large surface. We have seen many examples of this plant that were literally covered with their bloom, but have no means of making any definite statement relating to them. There is an account of a plant that, when seven years old, covered 905 feet of wall, was 116 feet in length, and carried 2275 blossoms, and this is altogether probable.

In this locality the plant is hardy with any exposure, though in the severest seasons it suffers some when facing fully to the south, especially when it has made a luxuriant growth and the ends of the shoots are not fully ripe. The plant blooms earlier in the season on the south side of a wall than when facing any other direction, but the blooms last much longer on an east or a west wall, and longer still when exposed to the north; in the latter case their color is more delicate. To those favorably situated for raising the *Wistaria*, it can be freely recommended, with no misgivings for its good behaviour. Besides raising it as a climber, it may be grown on the lawn, supported by a stake, and stopped when it reaches a height of five or six feet, and made to branch and form a head; by attention to pinching and stopping, it can be kept within a reasonable compass. The racemes of the *Wistaria* mingled with those of the *Laburnum*, which they resemble in form, are very beautiful, blending their colors harmoniously.

THE CULTIVATION OF THE NATIVE GRAPE.

The Grape is so completely adapted to universal cultivation in this country, that it might well be called Every Man's Fruit. Not only may it be raised in nearly every section and township, but on every farm, and its requirements are such that there is room for it on every village and city lot, and almost everywhere where there is a human habitation. The Strawberry is wonderfully fitted to very general culture, but, great as are its advantages in this respect, it is far excelled by the Grape.

When we consider the excellent character of many varieties of our native Grapes, the healthfulness of the fruit and the fondness for it that every one has, we might reasonably conclude that it would be abundantly raised and that there would be no stint to its general and con-



ONE YEAR OLD VINE RAISED FROM A LAYER.

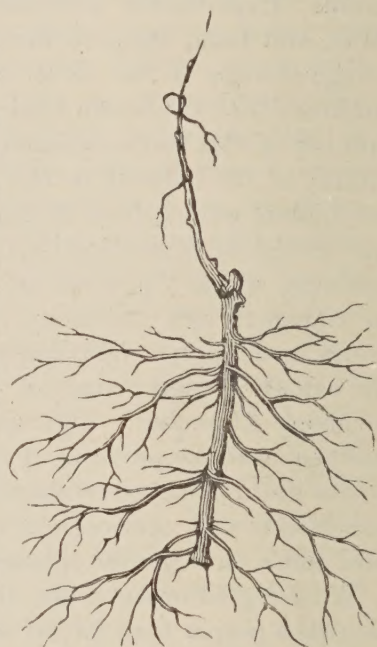
tinued use. That this, however, is not the case, all of us are well aware, and we may profitably enquire the causes that lead to neglect of so favorite a fruit, and, if possible, encourage that attention to it that its merits deserve. We do not overlook the fact that the vine receives attention at the hands of many successful vineyardists and amateurs; nor, on the other hand, that by far the greater number of amateur's vines are comparatively fruitless; but, numerous as are those who cultivate the vine, or who by their own methods essay to do so, there remains yet a much greater number, admirably situated to cultivate the fruit for home use, who, if they even give the subject a thought, never attempt the realization of that primitive ideal of peace expressed by the beautiful simile of sitting under one's own vine. The observation of many years has shown that the great obstacle to successful Grape culture is ignorance of correct principles and methods of training and

pruning vines; this not only deters many from any effort to raise Grapes, but defeats those who make the trial without a sufficient understanding of the vine's requirements. With the hope of being able to offer some assistance to amateur grape-growers, we shall endeavor to give some explicit instructions to guide them in their future attempts to have

"Vines with clustering bunches growing,
Plants with goodly burden bowing."

Some one may ask why the vine needs so much attention, and may point to the Apple and the Pear that need but comparatively little pruning, to the Peach, requiring still less, and the Plum and the Cherry that are quite impatient of the knife.

The reply is that the character of the vine is such that it demands this care. A vine left to itself rapidly extends its branches in every direction; it produces its fruit on the wood of the same season's growth, and on that only; consequently, in a very few years, with no pruning a vine would consist of



ONE YEAR OLD VINE RAISED FROM A CUTTING.

long, straggling branches, extending a hundred feet, more or less, and bearing a little fruit on the new shoots at its extremities. As this is a state of things impossible to allow in cultivation, the gardener's art seeks to confine the vine in a small compass, and to obtain the greatest amount of fruit possible in the space occupied. To successfully accomplish the achievement here proposed, due regard must be had to the natural demands of the plant, and every operation must conform to the laws that govern it. As already noticed, the fruit grows only on the new wood, consequently, the end to be attained is the annual growth of new wood confined to a definite, limited space. A great variety of methods of pruning have been practiced, all with the same end in view, and with varying success, according to the faithfulness with which these methods adhere to the natural principles controlling the vine's growth. The directions now to be given are entirely

practical, have been thoroughly tested, and their observance will ensure full crops of well-matured fruit, under ordinary conditions.

In order to present in full the details of training and pruning, it is necessary to commence with the planting of the vine and trace it through its successive stages of development. Preliminary to this, however, a few thoughts may profitably be given to the best situations for vines, suitable soils and their special preparation.

As a rule, the best exposures for the vine are southern and eastern; when necessary, an exposure to the west may be employed, but one to the north should be avoided. For vineyard culture there are many places adjacent to bodies of water, having a western slope, that are very suitable, but, unless there are peculiarly modifying conditions, an exposure to the west should not be selected. The south and east sides of a fence or building are favorite locations in the garden, and these places might be used very generally to great advantage for vine growing. If one will use his eyes a little with this subject in mind, he will be astonished to discover how many spots on every hand might be turned to profitable account with vines. A warm and well-drained soil is needed to produce good

bones, ashes, and superphosphates as specialties. The question is often asked whether it is best to plant vines in the fall or spring. We know of no reason why vines may not as well be planted in the fall as in the spring, in any part of the country, if the work be properly done. Fall-planted vines require a mulching or covering of leaves, Spruce or Pine boughs, sawdust, brakes, marsh hay, or some material that will secure them from severe freezing; after experiencing a temperature of 10° to 25° below zero, repeatedly, as most of us have during the past winter, the reasonableness of this suggestion will be readily perceived. Aside from extreme cold, however, great damage is done to newly planted vines by repeated freezing and thawing, as thereby they are lifted and thrown wholly or partly out of the ground, and thus either killed outright, or so much injured as to be worthless. Fall planting has this advantage, that the injured roots having time to callous are ready to start a new growth at the earliest opportunity in the following spring.

A very erroneous idea is held by many persons in regard to the best age of vines for transplanting, thinking the older and larger they are the better; we would on no account select a vine over two years old, and, ordinarily, well-grown yearling vines are preferable to older ones. The illustrations here presented give the general appearance of one year old vines.

In transplanting a vine, it should be set at



VINE ONE YEAR TRANSPLANTED.



VINE TWO YEARS TRANSPLANTED.

Grapes, but it is supposed that this end has been attained in most garden and residence lots, as it is a condition as essential to human health as to the welfare of plants. The vine is called a gross feeder, and, unless on new and virgin soils, it is best to make ample preparation by heavy manuring, as well as by deep tillage, before planting. There is no fertilizer better than well-rotted stable manure, but in its absence any general fertilizer will be valuable, and



VINE SPRING OF THIRD YEAR WITH ARMS EXTENDED.



THREE-YEAR-OLD VINE IN FRUIT.

least two inches deeper in the ground than it formerly stood; a hole should be dug sufficiently large to take in all the roots and allow them to be spread out straight without cramping or crossing each other. Although the roots of old vines often run quite deep, yet young vines extend their roots laterally at no great depth; consequently, a young vine should have its roots spread out so that they will be about six inches from the surface.

When transplanting is done in the spring, the tops should be cut back to three eyes; but, if in the fall, the vine may be left entire, and early in the spring all but the three lower buds rubbed off. When there is no longer any uncertainty about the growth of at least one eye, the others may be rubbed off, and preferably the lower should be left. The aim now is to obtain the growth of a single strong shoot. A stake should be driven down beside it to which to tie it, from time to time, as it grows; and at the end of the season there will be an upright plant, or, in vineyard parlance, a single cane, from two to four feet high, according to the strength of the young vine, the condition of the soil, and the character of the weather. In the spring of the following year, if the cane is a strong one, it is to be cut down to the three lowest eyes at the base, but if a weak one, it should be pruned to two eyes; in either case, one of these eyes is left for precaution, as in the first, two shoots only are allowed to continue their growth, the other one being rubbed off when it is certain they are sound, and in the other, only one allowed to grow. These shoots are to be kept tied up in an erect position as they grow, and at the end of the second summer the vine will consist of one or two strong canes. The following spring a two-year-old single cane should be pruned precisely as directed for a strong cane

the year previous, raising two canes from its base. The two cane vine, if strong, may be expected to produce a little fruit this season; if not strong, the canes should be cut down to single eyes and two strong canes reared.

Supposing the vine with two canes to be a strong one, the third year it may be pruned as will be soon explained. The canes are now to be laid down, in a horizontal position, extending in opposite directions from the main stem, and will appear as shown in the illustration. The shoots in this position are no longer called canes, but arms. Here it will be observed there are six buds on the upper side of each arm; from each of these buds will grow an upright shoot or cane. A strong-growing vine will form its buds about six inches apart, which is a proper distance for the uprights, or canes, to stand; when the buds are closer every other one can be saved and the others rubbed off, as in this case, in which the lower ones are to be removed; what is wanted is that the canes shall stand from six to eight inches apart. All the length of cane beyond that required for the six buds should be cut off before they are made to assume their positions as arms. The young canes, as they grow from each arm, will set fruit, and two bunches this season may be allowed to each one, and the fruiting vine will appear somewhat as shown in our sketch.

Having now traced the progress of the young vine to the fruiting condition, it is proper to enquire how it may be maintained in this condition, and how it may be brought to the highest productiveness, and, also, how its natural, rambling propensities may in the future be held in check and all its growth controlled with the view of producing and maturing fruit, with due regard to its continued healthfulness and vigor. These inquiries will be considered hereafter.



PLANTS IN THE BERMUDAS.

JAMES VICK:—As I am spending the second winter with my family in these charming islands, I have seen considerable of their peculiar vegetation, and have thought a description of a few of the beautiful tropical shrubs and flowers to be seen in the open gardens here, which were novel to me, might be interesting to many of your readers.

These islands form a compact little group, the larger ones connected together by bridges, which are stranded, as it were, in mid-Atlantic, —the nearest land being over six hundred and fifty miles distant. They are not very far south —about the latitude of Port Royal, South Carolina; but from their position, a little south



RESIDENCE IN THE TROPICS.

of the Gulf Stream, the tropical waters are dammed back by this stream, and a much higher winter temperature produced than is due, on this side of the Atlantic, to their latitude. The islands are the farthest from the equator at which the reef-making coral is still at work. The temperature during the winter generally ranges between 60° and 70°, rarely falling as low as 53° or 54°. The winter is considerably milder than at the Azores, and fully as mild, at least, as the Madeira Islands, while the much

hotter summers enable tropical plants to flower and fruit in the open air, which cannot be cultivated with any success in either of the above mentioned groups.

I have lived for some years and traveled extensively in parts of South America, but I have never seen so many interesting plants grouped in so small a space as here. The indigenous flora is, with the exception of the Palmetto, not markedly tropical in its character; but the Bermudians, being formerly a sea-faring people, have stocked their gardens with a great variety of trees and shrubs from the East and West Indies and tropical America.

I would like to speak at length of the beautiful drives over fine, hard roads, of the boating amidst the tortuous channels, harbors, and sounds, studded with picturesque islands, which give such a character to the group; and of the beautiful sea gardens, rivalling those on land, to be seen in the bays and pools, but I know I should thereby entirely exceed any reasonable space in your valuable little MAGAZINE.

First, a few words as to the more common plants, which, from favoring climate, grow in so much greater perfection here than at home. Roses, of course, take the first rank, the choice varieties of Tea, Noisette, and Hybrid Perpetual growing freely with little cultivation, and giving magnificent bloom throughout the winter as well as summer. They are ordinarily so abundant at Christmas time that one friend of ours replied to a request for flowers for decoration of a house for a ball by sending a bushel basket full of choice buds. The deliciously fragrant, little, clustered Banksia Rose climbs about over the trellises in a most luxuriant and wanton manner.

The *Lilium longiflorum*, called here Easter Lily, from its being in full bloom about Easter, is cultivated very extensively, and is used as freely in decorating the churches at that time as are the Roses at Christmas. One lady planted, some six or seven years ago, half a dozen bulbs, which have so multiplied that, last spring, she had over six thousand buds and blossoms on

the plants at one time; they are arranged in four long beds, two on each side of the walk, at different levels, leading from the street to the house, and make a very fine display, but rather overpowering in their perfume.

Geraniums, both double and single-flowered, grow almost like weeds, self-planted ones being



CRAPE MYRTLE.

seen along the walls in the country fields; the residents think nothing of breaking off a stem six or eight inches long with the flower.

The Oleander is in great variety of color, both double and single blossoms, and has become almost a nuisance from its spreading so rapidly. Thick hedges by the roadside, or between fields, fifteen to twenty feet high, are frequently met with, and in May and June, when covered with a dense mass of blossoms, are strikingly beautiful.

Two varieties of Night-blooming Cereus are very common. A gentleman showed me one



TAMARIND.

which has completely overrun a large tree. He told me that, a while ago, the weight broke down one of the limbs of the tree, so that he had to cut it away, and that to remove the

Cereus which was on the tree alone took three cart loads!

The Poinsettia attains the size of a large bush, and, with its vivid scarlet bracts, is a very showy object. But far surpassing this is the vine called Bougainvillea, densely covered with magenta-colored bracts. At the entrance to the Governor's place is a rock cutting, ten to twenty feet in height, the face of which, for over one hundred feet in length, is largely covered with this magnificent plant; in a few years it will spread so as to entirely cover the rock. I think I have never seen a grander display from a single plant than from a Bougainvillea. Other colors, varying from vermilion to crimson and delicate mauve, are to be obtained, but have not been introduced here yet.

Oranges, Limes, Lemons, Bananas, Avocado-Pears, Olives, Tamarinds, Allspice, Guavas, Loquats, or Japanese Plums, and several varie-



YOUNG COCOA PALM.

ties of the Anona family, such as the Custard Apple, Sweet Sop, Sour Sop, and the luscious Chirimoya, are all to be found here.

The queen of shrubs, or, as we call it, the Crape Myrtle, in two or three varieties, makes large, handsome-shaped shrubs.

The Frangipanni, both white and red-flowering, also grows into large bushes; the former has very curious, canoe-shaped leaves.

The Mahogany and India-rubber trees grow to a large size, especially the latter, one specimen of which, in Hamilton, shades a space seventy feet in diameter, the main trunk separating into five branches, every one of which is over five feet in circumference.

The Palms are represented by the Cocoanut,

Date, Gen-gru, the stately Cabbage, with its granite-like trunk, and a few others.

Among the more uncommon plants, of which I find I have space after all to mention but a few, are the *Antholyza Ethiopica*, a plant belonging to the Iris family, being allied to the *Gladiolus*. The long, sword-like leaves spread out fan-like from the root, lying in one plane



GUAVA.

almost as flat as a board; the raceme of flowers has the same peculiarity—the flowers, arranged in pairs, lying in one plane surface.

The Giant Lily, *Crinum cruenta*, grows in large, high clumps, with flowers in large clusters. Each blossom has six long, slim petals, of a very dark red color on the outside, and nearly white on the inside, with a red stripe down the center; has a very pleasant fragrance, suggestive of the Pond Lily.

The Life Leaf, *Bryophyllum calycinum*, grows all over the stone walls by the roadside. It is remarkable from the wonderful vitality of its thick, fleshy leaves, as, if one of them is hung up by a string in a room, leaf-stalks and rootlets will be sent out from each indentation of its scalloped edge.

Shell Flower, *Hedychium elatum*, an herbaceous plant, with stalks three or four feet long, and beautiful, satiny leaves, nearly five inches wide and two feet long, with parallel veins running obliquely to the margin; has very handsome flowers, with a slight fragrance, the buds looking as if they were made of white porcelain with pink tips.

A species of *Ipomœa*, with moderate-sized white flowers with a dark center, has the unusual property, for this family, of being sweet-scented.

Martinique Laurel, *Murraya exotica*, a magnificent bush, of large size, bears a small, white, orange-like flower; deliciously fragrant—when in bloom, one bush will perfume a large garden.

Surinam Cherry, a species of *Eugenia*, bears a handsome red fruit, the size of a large Cherry, with fluted sides; quite pleasant to the taste. It is very handsome as a bush, especially the young shoots, which add much to a bouquet, the young leaves having delicate tints, varying from pinkish-white to deep red, the old leaves being dark green.

The Poinciana, one species of which is a large, wide-spreading tree, another, Barbadoes Pride, a small bush. Both are noticeable from their minutely divided twice-pinnate leaves, about a foot in length; each leaf has from one to two thousand leaflets, and I counted on one leaf 2,056 leaflets. As you may imagine, the dense foliage of a large tree with such feathery leaves is very beautiful.

The Croton is a bush bearing beautiful ovate leaves, dark green on the upper surface and deep red beneath.

The Pork Fat bush bears fruit resembling lumps of fat, which are said to answer well for frying purposes.

The Tallow Tree, *Stillingia sebifera*, a large tree, forty to fifty feet high, which bears, when it has shed its leaves, as do many tropical trees even on their native soil, a large number of very striking and brilliant flowers; the flowers resemble the Pea in structure, the standards being scarlet, the center dark red tinged with



BANANA PALM.

brown, and the flowers are arranged in a circle with the standards outwards, making the whole look like one large, crown-like flower.

The Butternut, or, more properly, the Indian or Belgaum Walnut, *Aleurites triloba*, bears a fruit strongly resembling externally our Hickory nut, but with a solid, rich kernel, very pleasant

to the taste, but, unfortunately, if as many as four or five are eaten raw they act as an emetic.

The Sweet Ginger has a root similar to the ordinary Ginger, and is said to bear exceedingly handsome, fragrant flowers; this may be a not unfamiliar plant under another name.

I have not nearly exhausted my list, but am afraid my letter is much too long already.—
J. F. FLAGG, *Hamilton, Bermuda.*

BACK YARDS.

Dear reader, did you ever think how few persons have studied what is commonly called harmony? Did you ever suspect that if the truth were published, we should learn that people in their love of ease have overlooked every thing but convenience? It would appear so from the manner in which back yards have been allowed to degenerate into a nuisance. Just notice, if you please, how the back yard is often filled with every unsightly thing that is small enough to be got into it, and you will behold a chaotic museum of crippled barrels, smashed boxes, old fruit and oyster cans, stove-pipe, superannuated boots and shoes, old hats, and, as the auction bills say, "other articles too numerous to mention." Such yards may be found in the rear of many of our dwellings, and while, in some instances, expense has not been spared to produce a grand display for the front yards, the rear yards have been neglected, until the owner often wishes that the Chaldeans would fall upon it and sweep it away. It certainly is strange that ladies submit to such an imposition, and strange that men who are always trying to invent some new pleasure should neglect the need as well as the exciting gratification of putting in order a place in which, from necessity, we spend so many hours of life. Supposing these lines will be read by some thinking man or woman, the very first question may be, "How shall I find time and means?" The answer is, take time; you never did anything in your life unless you took time to do it. Just take time and you will find the means.

Having arrived at the sensible conclusion that there is no good reason why the back yard should not be made as inviting in appearance as the front yard, and having resolved to act upon the matter, the first thing to be done is to clear the ground of all the various articles usually found in such a place. Whether the yard is large or small, the process will be the same, and every kind of useless litter, like rusty tin, old iron and other rubbish should be carted off, but ashes and other fine refuse may be evenly distributed over the surface, after which the ground should be thoroughly spaded and broken up.

The first thing to be planted is an evergreen hedge clear across the back end of the yard. Should there be any unsightly conveniences which must be retained for use, the hedge may be planted far enough in front of the extremity as to leave room behind it for such articles as strike the eye unpleasantly. Should it please the fancy better, the hedge may extend across the yard in a curved line, in which case, use the concealed corners for hiding purposes. For a low hedge, or screen, nothing is better than *Arbor Vitæ*. In front of the hedge there may be a border three or four feet wide, in which may be planted a few Tulips and a limited number of showy, hardy, easy-growing perennial flowering plants, such as *Anemone Japonica*, *Aquilegia*, *Aconitum*, *Delphinium formosum*, *Helianthus multiflora plena*, one or two *Pæonies*, and a few hardy *Phloxes*. This would be a fine situation for the Japan Lilies, the peculiar green of the hedge showing off their colors to perfection. Many or few of the above named plants may be used, according to the size of the yard, and there will be no time during the season in which some of them will not be in flower. The rest of the space should be seeded with lawn grass, or nicely sodded. Shade is very desirable in a back yard, and, with that object in view, a tree or two, or more if there is room for them, should be planted, bearing in mind that in such a place it is well to combine the useful with the ornamental. In any place where there is a drain, plant a Pear tree near it, as it will feed well on a drain. Then a Cherry tree should have a place. These will not only afford shade, but will, year after year, yield fruit that will very soon pay all expenses. A Grape vine or two may be trained to cover the wall, and will also prove a source of both pleasure and profit. If there should be room, a few hardy, ornamental shrubs may be admitted, of which the *Althæas*, *Hydrangea paniculata*, and the Hybrid *Roses* are good. The hedge of evergreen makes the finest possible background for all that I have mentioned, but if any should object to the evergreens on account of their being too sombre, let them try the shrubby *Althæa*, which bears the shears well and makes a fine hedge, and through the late summer and early autumn will be covered with large, showy flowers in a variety of colors.

I have put my yard in the condition I have described, and it is so great a success that I am often told that I have my "front on the back side of my house." The front yard is kept neat to please those who pass, but the back yard is put in order for the pleasure and convenience of those who have occasion to use it most.—
E. HUFTELEN, *LeRoy, N. Y.*

GLOXINIAS.

The merits of the Gloxinia as a house plant seem not to be generally known. It is supposed to be difficult of cultivation, and hence principally confined to the greenhouse; but when its habits are understood few plants yield results so showy, and all for a little common care. The sub-varieties of erecta are most popular, because the leaves grow near the earth, clustering around the flowers in the center; but some of the other kinds, although they grow more straggling, have larger separate blossoms. The flowers are trumpet-shaped, from two to four inches long, resembling somewhat the Fox-



glove, but with each blossom on a separate stem, and vastly superior to the Foxglove in beauty. The varieties of color in Gloxinias are very great. The China-pink with its superb, velvet throat is our favorite, and we have seen a plant with sixty-three flowers which were so magnificent that they drew the gaze of every passer-by to the window which they thus decorated for two or three months. The velvety dark purple, the different shades of lavender, the white with pink or purple edge, the white blotched with color, or white outside with purple or pink lining, exquisite in effect, all are beautiful, and the last one seen always seems the most charming.

The Gloxinia is remarkably free from insect enemies, and with common care it will blossom freely and faithfully. The bulb should be planted in rich soil, and placed where warmth and sun can reach it. Once a day it should have water, but not too profusely, or the bulb will

decay, and not sprinkled so that the water rests on the leaves, or they will have a brown and burnt appearance.

After the plant has done blossoming, the foliage will gradually die down, when the pot can be set away for the bulb to get rest for several months. Some persons prefer to put aside the bulb dry, but we think it better to leave it in the earth. Instead of letting the leaves die, you can cut them off and plant them in pots, taking care to cover the stem and half an inch of the leaf, to root; or you can set them in glasses of water for this purpose, and you will thus form new plants for the accommodation of your friends, or for your own supply when the old bulb becomes less vigorous. Leaves set in the earth are apt to make stronger plants than those started in the water, but it is pleasant to watch the tiny bulb thrown out from the end of the stem in the water, and you can afford to try both ways.

Those who have had the pleasure of cultivating Gloxinias in their windows will not easily relinquish it. If the bulbs or cuttings cannot conveniently be procured, try a paper of Gloxinia seed, and start your own plants from the beginning. We have seen forty plants from one paper of seed. There is the additional charm of watching them to see what varieties will appear; and every one knows that the pleasure of the florist consists in a little uncertainty judiciously mingled with the certainty of his pursuits. A paper of Gloxinia seed will, if well raised and properly cared for, yield you, before the end of the year, blossoms magnificent in size and color, and the delight of yourself and your neighbors.—NEWBURYPORT.

NERIUM OLEANDER POISONOUS.

There, in yonder corner of the room, stands a companion of the house of many years, beloved and esteemed by every one: the beautiful Oleander! With its fresh, evergreen, lanceolate, coriaceous leaves, it is a pretty ornament in the room; but when its lovely flowers are unfolded in great abundance, it is indeed a sight wonderful to behold. Its pretty appearance and the little care it needs contribute to its being cultivated so generally; but the fact that it is found so extensively in houses, even in sitting-rooms and nurseries, is a proof that most persons are ignorant of its history and character, even not knowing whether it possesses injurious or beneficial properties.

Investigating into the history and character of the Oleander, it is found to belong, botanically, to the natural order Apocynaceæ, or Dogbane family; seven hundred plants belonging to this order are mostly trees or shrubs, only a

small number are perennial herbs. With only a few exceptions, all plants of this family contain a very acrid and bitter juice, which, in most of them, is considered rather suspicious; in others, the juice, as well as the seeds, is a deadly poison. In the whole family there is not a single individual that does not possess noxious qualities. The Oleander is, therefore, not as good-natured as many may believe. It possesses quite an amount of those qualities peculiar to its relations.

The native home of the Oleander is East India, Asia Minor, Arabia, and Africa. The coasts of little streams, creeks, and lakes are its favorite places, especially in mountainous regions. The rose-red, often double, sweet-scented blossoms, are very dangerous on account of their exhalation, and cannot be endured by many persons without sad consequences, as it causes headache, relaxation, stupefaction, feverish agitation, and even swooning, which happens when the room is small and the flowers abundant. According to LIBAUTIUS, (Orfila) a person who had flowers of the Oleander in the sleeping room died from the effect of their exhalation, and another person, who had partaken of roast beef roasted on a spit made of Oleander wood, died, according to the same author, in consequence thereof. Its exhalation in warm countries, where it grows in great abundance, affects the atmosphere to such an extent that it is almost impossible to live in the immediate neighborhood of it.

The sap in the leaves and branches of the Oleander is directly poisonous, and is for men as well as for all the higher organized animals, as horses, according to GROGNIER, and mules, goats, and sheep, according to GMELIN, a deadly poison. DIOSCORIDES mentions the poisonousness of the Oleander. According to ORFILA, numerous experiments on dogs show that the active principle of the Oleander affects violently the nervous system and the brain, causes stupefaction, insensibility, dizziness, and all kinds of lameness; affects the senses and enlarges the pupils of the eyes. Death ensues under convulsions, often preceded by vomiting. The post-mortem examination shows symptoms of narcotic poisoning, together with signs of local inflammation. PUIHN observed, according to GMELIN, intolerable anxiety, swelling of the stomach, swooning, and inflammation result from partaking of the Oleander. The watery extract prepared from this plant acts most violently, especially when injected into the jugular veins. ORFILA saw dogs expire in four to seven minutes after the injection of a diluted solution which contained from twenty-four to thirty-six grains. It acts less violently when

brought into the stomach; but two drams was enough to kill a little dog in twenty-two minutes. The bark and leaves, when pulverized, act as violent drastics, and may be used to destroy rats and mice. The water in which Oleander leaves have been macerated will kill sheep in a very short time. FUNKE says, "all parts of the Oleander possess an extraordinary sharpness, and are poisonous to men and animals. It is also dangerous to have it in closed rooms at the time of flowering."

Experiments with this plant on myself and others have convinced me that the Oleander is indeed a dangerous plant. Its disagreeable properties should induce us to great precaution, it should never be permitted to share with us the comfortable warmth of our dwellings, as it ill repays the kindness with which it is thus treated by infesting the atmosphere with the noxious vapors it exhales, so as to cause at least headache and general indisposition. Special care should be taken to keep this wolf in sheep's clothing out of the reach of little children, who touch and taste everything, for if any of the juice should remain on their little fingers which they are ever ready to put into their mouths, the result might prove fatal. It should be banished from nurseries.—MRS. ADOLPH LEUE.

GERANIUMS AND CALLAS.

MR. VICK:—I always have Geranium blossoms from September to September. I start my winter-blooming plants in pots in May, nipping off the buds as fast as they appear; in September I take them in the house and water once a week with copperas water. My Geraniums look as if they had grown out of doors, so strong, dark and healthy they look, and the zone is almost black. I have only a common window in which to place my plants.

My Calla has not been free from blossoms and buds since November. I received it from California on the second day of November, and on the same day I took a clean pot that will hold a gallon, put in a few pieces of broken bricks, then a handful of leaf-mold, garden soil and sand mixed and sifted. I put in my bulb and filled in to the depth of three inches with rotted horse manure, and covered lightly with sifted soil; then I sprinkled a tablespoonful of pulverized copperas on the top of the dirt, and after pouring on boiling water stood the pot in the south window. In three days I had two leaves, and in six weeks I had three blooms and two buds on it. It was a curiosity to every one. Once a week it gets a liberal supply of copperas, and hot water every morning. The plant looks as if it was standing in a swamp.—MRS. G. M. H., *Paw Paw, Mich.*

THE CORKSCREW BEAN.

MR. JAMES VICK:—In the *MAGAZINE* for March, 1880, I described a very interesting and singular plant, the *Cyclanthera explodens*, or exploding plant, at the same time giving directions for its cultivation. Now, I propose to call the attention of your readers to another interesting plant, the Snail Flower, *Phaseolus Caracalla*, or, as it is sometimes called, the Corkscrew Bean. This is a dwarf climber, seldom exceeding a height of ten feet, even when properly grown, and on this account would prove valuable to any person desiring a dwarf climbing plant. It is also an excellent decorative plant when trained on a balloon-shaped trellis. As it was one of the first exotic plants cultivated, it has on this account lost most of its attractions, and is now but rarely seen in our gardens, and is probably known to but a very few of your readers. It is a twining, or climbing evergreen perennial plant, with tuberous roots, and bearing large clusters of large flowers, in long racemes, which are of a purple and yellowish hue, and at the same time are deliciously fragrant. The flowers are very singular and remarkable in their appearance, and the spiral form of the folded flowers bears



somewhat of a resemblance to a snail, from whence the popular name, Snail Flower, is derived. It is a good plant for training up the rafters of a warm greenhouse, and, if placed in a warm room and given the necessary moist atmosphere, and kept clean and free from insects, will flower continuously during the late winter and spring months. When grown in a pot, it must have a good drainage, and ordinary potting soil, in which a liberal quantity of bone dust has been mixed, forms an excellent compost for it. When grown inside, it is very subject to the green-fly and red-spider; a slight fumigation of tobacco will destroy the former, and the plant should be freely and frequently syringed to avoid the latter. After all danger of frost is over, the plant can be planted out in a well prepared border, where it will grow freely and produce in profusion an abundance of its singular, snail-shaped, purple and white flowers.

The *Phaseolus* belongs to the natural order, Leguminosæ, and is a native of India, whence it was introduced in 1690. A writer, in de-

scribing this plant, very correctly remarks, that none but a botanist would at first sight detect any resemblance between the flowers of this extraordinary plant and those of the common Kidney Bean, and yet they both belong to the same genus. In many parts of the south of Europe and the north of Africa this species of *Phaseolus* is said to be grown for culinary purposes, the pods being the parts used. The plants can be easily increased by seeds, which are produced very freely. The seed should be sown about the end of February or beginning of March, in a well-drained pot or pan of light, sandy soil, the surface being made smooth and the seed sown thinly, eyes downward, and covered slightly with light, sandy soil; place the pot or pan in a light, warm place, and keep moist. As soon as the plants are strong enough to handle, they should be potted off into three-inch pots, using light, fibry soil; keep close and warm until well established, and shift into larger pots as often as it is necessary; the plants should be pinched back occasionally to make them bushy; on no account should they be allowed to become pot bound. Gradually expose to the open air, and plant out, when all danger of frost is over, into the place prepared for them. The soil should be dug to the depth of two feet, working in a good portion of well-rotted manure. During the summer season the plants require a little attention as to training, and, in the event of dry weather, an occasional watering of liquid manure will prove of benefit to them. About the middle of September, or just before frost, the plants should be cut back, carefully taken up and potted, and placed in a dry place of moderate temperature, and in spring replanted in the garden. It seems scarcely necessary for me to add, that the plants which are wanted to produce flowers during the winter and spring months should not be allowed to flower during the summer; all flowers should be broken off the instant they are noticed, and it would be well to cultivate a few plants expressly for this purpose, so that they could be taken up and potted about the end of August, as this treatment would give them a chance to become well established before cold weather sets in. This species was named *Caracalla* by the Portuguese, who first brought it from South America, in consequence of its hooded flower.—C. E. PARNELL, *Queens, L. I.*

DAHLIAS FROM SEED.—From one paper of Dahlia seeds I raised fourteen plants, and the flowers of all were beautiful and very double, excepting one. I was very much pleased with my success and hope I may have as good luck next summer.—Mrs. C. S., *Boulder, Colo.*

HOUSE PLANTS.

MR. VICK :—Although this has been such a long, severe winter, house plants that were not chilled seem to be doing finely. My own never were more thrifty, and they are remarkably free from insects. Notwithstanding we have had so little sunshine, my sitting-room window is now, February 1st, as gay with blossoms as a flower-bed in June. It contains Abutilons in variety—Boule de Neige, Darwinii, Santana, and Roseum; Carnations, white and red, one grand Peter Henderson that has now nine large, well-developed flowers on it, and numerous buds; Hyacinths, white and red; fragrant Narcissus, a beautiful trellis of Mahernia full of sweet little bells; a Daphne odorata that has been in bloom since November, and a Camellia Japonica with three double, white flowers on it. I am surprised and pleased with the success I have had blooming this aristocratic plant. I have many other plants I would love to write about, but will mention only one more.

I wish all lovers of plants had an Olea fragrans. Mine is a daily comfort to the household. It is in every way a desirable plant. Its flowers are not showy, but it makes up for this in fragrance and continuity of bloom. It has a pretty, tree-like form, with clean, glossy leaves, and with me has been entirely free from insects. Its clusters of small, cream-colored flowers fill the house with a pleasant odor, something like ripe Peaches.

Ladies have more leisure in February and March than at any other time of year. We have then recovered from the overwork and dissipations of the holidays, and the pressure of spring work is not yet upon us. A portion of this time should be spent in planning gardens and flower beds, and looking over catalogues, and choosing seeds and plants that are desirable for spring. And what a pleasant task it is with such a work of art to aid one as *Vick's Floral Guide* for 1881. Indeed, it is always so beautiful that I cannot imagine how it can be improved. This is what I think every year, yet the next it comes out more attractive than ever. Do not delay making your selections and sending your orders, for the cold winter will soon give way to the singing birds and blooming flowers. I wonder how old one must grow not to feel the pulses quicken and life renewed in every nerve at the thought of the return of the Robins and Bluebirds, and the Daisies and Violets.—AUNT FANNY, *Morningside*.

GIANT ROCCA ONION SOUTH.—RICHARD LEE, of Waldo, Florida, writes, February 22d, "My Rocca Onions are now a foot in height."

AMARYLLIS JOHNSONI.

MR. EDITOR :—On page 17 of the MAGAZINE for January, are some statements in regard to the cultivation of the Amaryllis Johnsoni which are in broad contrast to my method of growing this interesting bulb. This method, without claiming for it absolute superiority over others, I take the liberty of describing. I know that you are in favor of fair discussion, and appreciate the results of actual experience.

The rules of cultivation laid down in the article referred to above, coincide exactly with my own up to the period of blooming, and when I first began with A. Johnsoni, I followed this programme all through, but was never quite satisfied with the results. It took so long a time to get rid of the old leaf stumps, and to grow a new bulb, and the bulb continuing the same size from year to year, blooming no more profusely nor in greater perfection, that I lost my interest in it, in a great degree—concluding that I got very few blooms in return for my costly bulb and the care I lavished upon it. I then adopted the Rand method, with the most gratifying results. After blooming, I gradually decrease the quantity of water for a time, to give the plant a partial rest, but never suffer the leaves to droop, and never cut one off—leaving them to their natural, slow decay. This decay, as in the Agapanthus or Imantophyllum, is so gradual as to be scarcely observed, and the growth of the bulb fully keeps pace with the loss. Then, in about two months, I encourage growth again, and before many weeks the flower stem appears. In the years when the plant has been continually under my own care it has had three distinct blooming periods within a year, with one, and once with two stalks immediately succeeding the first, and, what was equally gratifying, the bulb steadily increased in size. Twice my first plant was ruthlessly shorn of its leaves in the fall by a careless gardener, at which time it bled for several days, as a Grape vine does when cut in the spring; but even then I obtained two seasons of bloom in the year, though the bulb decreased in size after each denuding process. My bulbs are now large and very thrifty, and never fail to bloom, and the broad, rich leaves, tinted with carmine, make the plant beautiful even when not in bloom. I, therefore, prefer the latter method. Which is the correct one?—A., *Minneapolis, Minn.*

A HUNDRED FOLD.—It is surprising how much can be done with a little seed and a good deal of care. Mrs. D. E. BERO, of Austin, Minn., raised 130 pounds of Alpha Potatoes from one pound of seed.



THE REWARDS OF SCIENCE.

The lovers of science generally find that, like virtue, it is its own reward. An enthusiastic naturalist took from Canada to Devonshire, England, last December, about twenty Potato bugs. Some, or all, of them, by some mismanagement, were allowed to escape, but in what condition they were for locomotion at that season of the year we can hardly imagine. This caused the greatest consternation, and a vigilance committee was immediately organized to compass their destruction, and this committee reported the enemy captured and destroyed; but under what circumstances the Colorado beetles were found in the cold, stormy season is not stated. Perhaps sitting on the fences longing and waiting for something to eat. The enterprising naturalist, however, was arrested and tried, and fined \$25, and the people are all mad because it was not made \$1000. The small fine will buy enough London purple or Paris green to destroy a hundred such colonies. The gentlemen from Colorado are causing about as much foolishness in England as the gentlemen from Ireland are in America.

AMERICAN PEACHES IN ENGLAND.

The *Florist and Pomologist* gives a fine colored plate of an American Peach named Washington Rath-ripe. A correspondent thus speaks of this and other American varieties: "The variety is of American origin, as its name portends. My employer pronounced it the best Peach of the season, and our Peach season here, with three houses, extended from April 24th to October. Thanks to the late Mr. RIVERS, the season may be continued for a long time by making a good selection; and we are equally indebted to American enterprise for some good early sorts, namely: the Alexander, which I fruited on April 24th, followed by Amsden June and Haines' Early (not Hale's, as it is mostly called), a most delicious fruit. I could enumerate many more equally good, but all my practice is under glass, the situation and seasons rendering out-door Peach culture here impracticable."

POROUS OR GLAZED POTS.

The comparative advantages of porous and of glazed pots have been under discussion lately in the English *Journal of Horticulture*, with the balance of evidence in favor of glazing. One writer says: "In brewing, the oftener water passes through the malt the weaker the ale, and after three or four mashes, it becomes very 'small beer' indeed. So in water passing through the soil; it may be so frequent in light pottings, and so necessary to be often applied with porous pots, that a great part of the soil's virtues are washed away quite out of reach of the roots of the plants. The oftener the soil is 'mashed' the weaker it becomes in nutritive elements."

The illustration here offered is a very forcible one and the conclusion apparently sound. In confirmation thereof, the writer gives an example of the practice of Mr. HENRY CANNELL, one of the largest florists and plant growers in the south of England, which is to catch the water in tanks that drains from his flower pots and use it over again in watering. "'Depend upon it,' said he, (referring to Mr. CANNELL) 'there is no water like this,' (the water that had drained from his plants) 'there isn't indeed; it's just the right strength, and the plants like it. Look at them!' I did look at them, and fine they were. They were not in glazed pots, but their condition was confirmatory in a very striking and practical manner of what I have advanced."

BLUE ROMAN HYACINTH.—The White Roman Hyacinth is a very pretty early-flowering variety, particularly desirable for forcing for early flowers. Lately a blue variety has been introduced, but it is unworthy of culture, as we judge from our experience. A correspondent of the *Journal of Agriculture* writes: "After two season of trial I strongly condemn it. It is not the least adapted for forcing, and a great percentage of bulbs will not flower. It is no earlier than *Scilla siberica*, and cannot in any respect equal that charming little bulb."

FROM SCOTLAND.

A subscriber, of Louisiana, sojourning for a time in the land "Where blooms the red Heather and Thistle sae green," and who failed to receive the early numbers of the *MAGAZINE* for this year, thus pleasantly writes of things in and about the old Scotch capital: "I cannot say how much I miss the pleasant monthly messenger, that almost seemed to bring with it, across the ocean, a breath of the soft Louisiana air, laden with the perfume of Violets, Sweet Olives, and Magnolias, or the gentle rustle of the breeze playing among the Crape Myrtles, that ever in the hottest weather look deliciously cool, though no Rose can excel their color, of intensest pink.

"Dear Scotland is very different from all this; such a winter as we have had of snow, sleet, and fog, almost, I should imagine, as bad as the Northern States of America. Last summer, however, was very beautiful, and as I lived very much in a fine garden, there was for me much enjoyment. How often was I reminded of a lesson that you have so often tried to teach us, in your wise book, that the good God will never give every advantage to one place, any more than to one person. Flowers which I grew in Louisiana without any trouble, such as Tuberose, Cape Jasmine, Sweet Olives, and many others, require a tremendous amount of petting and nursing in this country, and, even after all the toil and money spent upon them, they never looked as grand and luxuriant as mine, that were half wild. But here, on the other hand, delicate flowers, that needed almost perpetual shade and watering in America, do finely. The Pansies in Britain are certainly far finer than any I have ever seen on the other side of the Atlantic."

FOOL'S PARSLEY NOT POISONOUS.

Æthusa Cynapium, or Fool's Parsley, a European plant that has become naturalized in many parts of this country, is noted in all our botanical works as a poisonous plant, and in this light has been regarded from time immemorial in Europe. Dr. HARLEY, of England, has for several years been experimenting with it, to ascertain its real character. The result of his researches was, that in 1873 he announced it to be non-poisonous. Since that time he has been continuing his investigations and experiments, and last year an account of them was published entirely confirming his former conclusions.

There are many circumstantial statements on record of cases of poisoning by this plant; these cases are noticed by the doctor, and in most of them the evidence, under his analysis, points to

some other plant. As conclusive proof of the harmlessness of Fool's Parsley, he prepared carefully the juices from growing, succulent plants, and from those in a mature state, and administered them to a little, six-year-old girl, to himself, and to two other adults. The juice was given to the child and himself in doses ranging from two drachms to four fluid ounces, and to the other persons, who were diseased patients, in doses from one to eight fluid ounces. From these doses there were absolutely no effects, thus clearly establishing the innocence of the plant. Dr. HARLEY is connected with St. Thomas hospital, London, and, it is unnecessary to say, his reports are entirely reliable.

FROG-TOADS.

The foreign papers are describing a hybrid between the toad and the frog produced by Mons. DELEUIL, a celebrated horticulturist, of Marseilles, much noted for his success in growing new plants, especially the Yucca, Amaryllis, and Begonia. Noticing that while toads were very useful in destroying insects, they were slow and clumsy, and that they moved with difficulty from one part of the garden to another, and that frogs were much more nimble and active, the idea occurred to him that if he could obtain a cross between these two nearly related animals it might inherit the virtues of both parents, to wit: fondness of destructive insects for its food, and swiftness in search of it. In his efforts in this direction, M. DELEUIL has been eminently successful, and has obtained as the reward of his experiments a hybrid race which is so effective as insect destroyers, both in doors and out, as to almost completely rid his gardens of these pests.

FROST IN THE TROPICS.

A recent mail steamer from the Isthmus of Panama brought the intelligence that a heavy frost visited Gautemala on the 10th of February, which caused from one to two million dollars damage. After the frost, the cane fields and coffee plantations appeared as though a fire had passed through them. The leaves of the Coffee trees, the most vigorous tree as well as the tenderest shoot, were discolored and shriveled, and broke to pieces at the slightest touch, while even the tender twigs were injured. This visitation must have been a great surprise to the people of that little republic, which lies between 14° and 17° north latitude, fully 10° below the frost line as heretofore established.

MARMALADE.—In Spain large marmalade factories are being established to utilize the surplus Oranges. It is put into air-tight cans and shipped to all parts of Europe.



GREEN APHIS—BRYOPHYLLUM.

MR. JAMES VICK :—The account Mrs. J. H. E. gave in the February number of your valuable little MAGAZINE was indeed very welcome, and I offer here my earnest thanks and congratulations. My plants have suffered considerable at different times from the underground torments for which she has kindly given us the remedy; but my principal difficulty is with that pest of amateur gardeners, the aphid. Has any one ever discovered anything that will entirely exterminate him? Last spring, when I was completely exhausted by the vain struggle to keep down these little pests, I found all the buds of a favorite hardy Rose literally covered with them. I vowed vengeance, and made a strong decoction of grated soap and soapsuds, which I allowed to ferment, and then added a little water and applied it liberally. The result was all that could be desired; the little green imps curled up their toes and died instantly, giving me a sweet revenge in wholesale murder. I meant to wash the soap off at once, but the day was warm and the bush was large, so I decided to "leave it until to-morrow." When "to-morrow" came grief and despair accompanied it; my Rosebuds were as black as coal, proverbially, and no amount of scrubbing would restore them to their original hue, and in a few days they dropped off. Three or four clusters which I had over-



LEAF OF BRYOPHYLLUM FORMING BUDS.

looked were all that escaped, to bloom beautifully in spite of the aphides, for I had not the heart to touch them again. Mrs. Loudon recommends quassia, in the proportion of an ounce of chips to every quart of water. "If any of the aphides remain after the first application, the shoots may be dipped a second time, or the quassia-water made stronger." I have tried it without much success. It has the advantage of not being injurious to plants.

I should be much obliged if you could tell me the name of the enclosed growing leaf. I had a plant of it last year that grew four feet high. The drawing was given me by a friend, who said it was "a very pretty *Lychnis*," but I think it must be one of the *Agrostemmas*, as it is the color of the Rose of Heaven. Can you tell me which it is?—E. D. K.

The leaf referred to above is that of *Bryophyllum calycinum*; a figure of it with flower

cluster was shown on page 117 of last volume, here we present one in the condition of that received with this communication, little plants having formed at the divisions of the margin. The plants are of the easiest propagation in this manner, merely by laying the leaf flat on moist sand.

Tobacco smoke is the sovereign remedy for green aphid.

DISEASE OF MELON VINES.

MR. VICK :—If you can tell the cause of the Melon vines, mostly Water-melons, dying about the time the melons are about one-half or two-thirds grown I wish you would answer in the MAGAZINE. I have examined root and vine with a microscope, but cannot find the cause. The vine commences to die close to the hill and dies outwards for several days. It is no new thing; I have been experimenting for several years, but to no effect. I have examined the melon patches of different persons, but fail to find a remedy or the cause. The leaves look as if they were frosted, the vine is spotted as if blighted and stung, the roots underground are bright and healthy. I have tried putting different liquids on the hill, have covered the vine at the joints to make it take root, but when the vines commence to go nearly the whole field will die. I have lost hundreds of dollars worth of melons, and know of others as unlucky, and we will be glad to get some information on the subject.—D. F. P., *New Lisbon, O.*

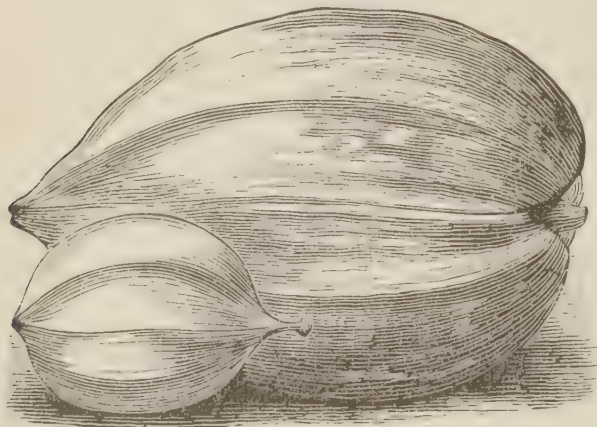
One of the largest melon and Squash raisers of this section, Mr. S. B. PAINE, informs us that his experience in the cultivation of Water-melons coincides in every particular with the statements made in the above communication. He has been extensively engaged for fifteen years in raising melons and the Hubbard Squash. During the first five years of this time he saw nothing of the disease; after that time it made its appearance, and some years has caused great destruction; for the last three or four years it has done less damage, and the last year scarcely any. He expects that in time it will disappear entirely. Not only did the disease visit Water-melons, but the Hubbard Squash vines; to these plants, however, it was less fatal, as their habit of rooting at the joints of the stems secured them to a great extent. The disease always showed itself at the central part of the plant, and when this was destroyed the rooted branches

became independent plants and perfected the crop. The damage, consequently, to Hubbard Squash was always light. Mr. P. has never found the cause or remedy for the disease.

SPECIMENS FROM A NUTTING TRIP.

MR. JAMES VICK :—Seeing an article very interesting to me in the MAGAZINE for January, 1880, entitled "Nuts and Nut Trees," I take the liberty of sending you a few specimens, reminiscences of a lovely day spent with the little ones in the "Old Mississippi bottom." The large Hickory nuts, and the acorns, are bottom nuts, while the small ones are from the uplands; both are the shell-bark variety. The acorns are from the Pin Oak tree; the same variety grows on the uplands, but the nuts are not nearly so large as on the low lands.

Your new GUIDE lies before me, looking so enticing that I want to send for everything in it, only the failures are so numerous—what with alternate drouth and drench on a clay soil success has to be worked hard for.
—MRS. W. A. L., *Aledo, Ill.*



THE SHAG-BARK AND THE WESTERN SHELL-BARK HICKORY NUT.

The specimen nuts were duly received. The smaller ones are the true Shag-bark, and the larger ones, the western Shell-bark Hickory nut, and are different species; the Shag-bark is *Carya alba*, and the other, *Carya sulcata*. The former, or Shag-bark, is thin-shelled, and is the kind most prized, for the greater size of the latter is mostly due to its thick shell. *Carya alba* is found from Maine south as far as Georgia, and west as far as the Mississippi river, but most



ACORN OF THE MOSSY-CUP OAK.

extensively in the Eastern and Middle States; *C. sulcata* grows sparingly in Pennsylvania and

in the Atlantic States southward, but west of the Alleghanies it is the common Hickory nut. When next our friend shall go a-nutting in the "Old Mississippi bottom," if the foliage of these two kinds of trees be observed, it will be seen that the leaves of the Shag-bark, or *C. alba*, have five leaflets, while those of *C. sulcata* have from seven to nine leaflets.

The acorns are fine specimens from the Mossy-cup Oak, or *Quercus macrocarpa*, the cups measuring nearly an inch in diameter. The fringe of the upper scales of the cup is quite strange and beautiful. This species is what is commonly called Bur-Oak at the west, otherwise known as the Mossy-cup White Oak, and is a handsome and valuable tree. The name Pin Oak is usually applied to *Q. palustris*, quite a different tree.

A VALENTINE.

For valentine will you accept
Some Strawberry flowers to-day?
For "there will be summer and harvest,"
To me they suggestively say.

They promise the fruit that will come,
Made perfect and ripe by the sun,
That now in these delicate blossoms
Is only just fairly begun.

No fear have their frail little petals,
Raised trustingly up to the skies,
While the stars above them are shining,
Or the sunbeams are greeting their eyes.

No fear of wild storms of disaster,
Nor yet of the hot summer sun,
They stand in their life-lot, my dearest,
Fearlessly strong, every one.

So stand they—as we should, confiding,
Unflinching trusting in God—
Though, ere the short summer be ended,
They all may be torn and down-trod.

O, may we all stand, like these blossoms,
With faces of faith upward turned
To the dear, blessed Father of all things,
Who never a flowerlet hath spurned.

And, when, in His love, He shall take us,
Wher'er on earth we may stray,
May He find us true, meet for his service
In the fair fields of bliss far away.

—E. D. R.

WHITE RUSSIAN OATS IN CALIFORNIA.—It is a great pleasure to a conscientious dealer to know that what he sends out affords pleasure and profit. O. T. GOOCH, of Cedarville, Cal., wrote us, February 20, "Last season I obtained of you one pound of White Russian Oats, and planted them in drills one foot apart. They grew to the height of six feet, with stout straw, and were the loveliest things to look at when growing that I ever saw. I gathered 250 pounds from the one pound of seed. Every one was pleased and surprised who saw them."

PICTURE PLANTS.

MR. VICK:—Can you give me the distinguishing name of the Begonia of which the enclosed leaf is a sample? I have it trained flat against a light frame, keeping one side mostly towards the light, and it is now one mass of variegated, pink bloom, hanging like a veil over the one side. It is perfectly beautiful. I have great success in training house-plants in this way, that is, flatly, and the result is very satisfactory. My silver-edged Ivy Geranium is a sample of this sort of culture, and is a beauty. Also a Fuchsia, or two of them, of different bloom, planted as one, and trimmed and trained until it is perfectly symmetrical in appearance, with blossoms on both sides of the flat surface, looking like one plant with parti-colored bloom. I have just trimmed up a Peristrophe with a view to making another picture plant of it—for such they are, in the symmetry added to their natural beauty.—M. B. B., *Bellbrook, O.*

The Begonia leaf received with this inquiry was Begonia grandiflora rosea. This is a very fine free-blooming variety, flowering well in the winter season. The training of plants into artificial forms is, like geometrical gardening, very pleasant as a variety, but a little of it is enough; it is a treatment of plants that shows their subserviency to the manifestations of the skilful cultivator, and, if not carried too far, may be agreeably indulged in.

A MEMORY.

The snow-flakes are falling without,
But my room it is cheery and warm;
And I heed not the voice of the wind,
Nor fear the wild rage of the storm.

I think how the gold of the sun
Came shimmering down in the June;
When the songs of the birds and the winds
Chimed together the jubilant tune.

Ah! methinks 'tis a thought of old times
That sends me thus wandering to-day;
And Roses are blooming, and Daisies are white
Where the sun and the shadows did play.

Yes, I see now the Daisy and Rose
That were culled by the beautiful hand,—
Ah! me, we have wandered afar
Since enchanted we roamed in love's land.

I dream, 'neath the glorious sky;
The birds carol glad as of old,
Queen summer flings over the earth
Rich blossoms of purple and gold.

The snow-flakes are falling without,
But my room it is cheery and warm;
And I dream to the voice of the wind,
And sing to the rage of the storm.

—MRS. CHARLOTTE E. FISHER.

VIOLET NOT BLOOMING.

I have a sweet-scented Violet which has occupied a sunny corner of one of our flower beds for four years, and never blossomed. It grows large and thrifty, and has a wealth of foliage. What is the trouble? What shall I do with it? I have often looked in your MAGAZINE for some hint as to its culture, but have failed to find any counsels or complaints.—MRS. J. H. E.

We should divide this plant and transplant in a sheltered and somewhat shaded place, first making the soil rich, if not already so.

BOOKS FOR VILLAGE LIBRARIES.

In these days almost every town and country village has, or aspires to have, a public library for the benefit and enlightenment of all citizens. In selecting books for these libraries, regard ought to be paid to the needs of the community. In every country town the library should contain plenty of works on botanical subjects, agriculture, horticulture, and floriculture, written in a familiar and practical style, that can be comprehended by those who are unable to spend months and years studying languages, and the technical terms of art and science. There is too great dearth of such reading matter in farming neighborhoods, and many who live and work so near the very heart of nature know little of her secrets. The agricultural department in one or two weekly papers is not enough; books are needed where can be found just what is wanted to be known about any plant that may be cultivated. Such books do wonders by awakening in the young an interest in these important and pleasant studies. They would do good, and good only, which cannot be said of the piles and piles of novels which crowd the shelves of almost every circulating library.—E. J. C.

A PERFUMERY FARM.

A flower farm has been started at Carpenteria, Santa Barbara county, California, with buildings suitably fitted up with laboratory and stills for the purpose of extracting the essential oils for the sake of the perfumes of the flowers. The fields are described as acres of Tuberoses, English Violets, Jessamines, and Orange blossoms. "First on the list of perfume bearers is the Provence Rose, our dear old "cabbage," or hundred-leaved, which has lost none of its ancient charms, yet has been supplanted by Roses of deeper and purer tints, or by the Tea Roses which are so inexhaustible in their variety and beauty. Mr. HALL obtains his stock of Roses and Jessamine, as well as the Bitter Orange, in the south of Europe; of the latter he has several thousands of trees. Two weeks ago (January) the Tuberoses were still in perfection—a field of 10,000!"

FRINGED GENTIAN.

MR. VICK:—Cannot Gentian crinita be cultivated? There is a swamp near this place where the plants grow. Gentians and the Grass of Parnassus, I think, are the most beautiful flowers that grow.—E. S., *Cass-town, Ohio.*

The Fringed Gentian can be cultivated in the garden. It wants a cool place, or one where it will not get too much sun. A deep soil that will not be apt to get too dry is best suited to it.



THE CUTHBERT RASPBERRY.

RASPBERRIES FOR TABLE AND MARKET.

In calling the attention of our readers to the two kinds of Raspberries here illustrated, we do so confident that, of the numerous varieties tested and found valuable, these now stand at the head of the list, as combining the greatest number of good qualities for general cultivation.

The wild black and red Raspberries that grow in the fields and thickets in nearly all parts of the country are associated in the minds of most of us with our childish ideas of happiness, with pleasant summer rambles, and, probably, in some instances, with youthful romantic adventures.

While the origination of the two excellent varieties, of which the faithful likenesses grace our pages, is an evidence of the capacity for amelioration of the wild, native fruits from which they spring, it is, also, a guaranty of future progress in the same direction, the extent of which can be only vaguely conjectured, when the skill of horticulturists, guided by scientific principles, shall be directed to the attainment of this result. The Raspberries of the highest quality are the European varieties. These, although long since introduced, and now cultivated more or less in all parts of the country, are found not to be sufficiently well adapted to the climatic conditions of any section to be thoroughly satisfactory. In some parts they suffer from the heat of summer, and in others from the severity of winter. Notwithstanding these difficulties, those who would raise fruit for quality, without regard for other considerations, will still continue the cultivation of the Antwerps, the Falstaff, the Franconia, and others. Judging from the character of the plant and the

fruit, and also, from the circumstances in which the Cuthbert originated, there is a probability that it is a hybrid between a native red and the Hudson River Red Antwerp. The quality of the Cuthbert is good enough to satisfy any one but a most fastidious connoisseur, while its firmness enables it to be carried in safety to market, and its hardiness and healthy foliage make it adapted to a great variety of locations. The berry is bright red when ripe, turning a little dark when over ripe; it is the firmest of red Raspberries, and, on this account, unexcelled for marketing.

The first fruit that marked a decided advance in the improvement of our red Raspberries was the Turner, which originated with Professor TURNER, of Jacksonville, Ill., nearly fifty years since; this has proved the hardiest red Raspberry ever cultivated, but the Cuthbert, in this respect, is all that could reasonably be asked for most localities, and will winter unharmed, unless visited by arctic weather, like that recently passed. The quality of the Cuthbert is much superior to the Turner, and the opinion is prevalent among those who have tested both kinds that it will quite supersede that old and well-tried sort. Without extending the subject, we may very properly here notice another Raspberry that has a similar origin to the Cuthbert. We refer to the Herstine, of which E. P. ROE, to whose work, *Success with Small Fruits*, we are indebted for these illustrations, says: "After several years experience on my own place, I regard it as the best early Raspberry in existence. The berry is large, obtusely conical, bright red, and delicious in flavor. It is scarcely firm enough for market where it must be sent

any great distance, but if picked promptly after it reddens, and packed in a cool, airy place, like that under my northern piazza, it carries well and brings good prices."

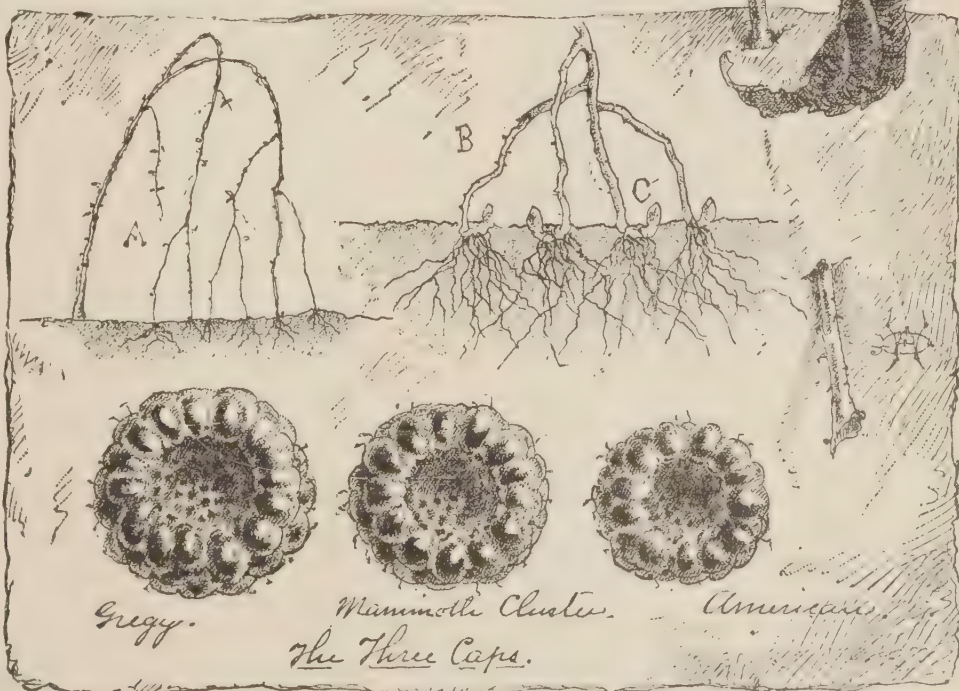
Turning now to the other section of native Raspberries, the engraving almost tells its own tale; side by side the wild Black Cap, the Mammoth Cluster, and the Gregg show the successive enlargements. The increase in quality is as marked as that of size; the comparatively dry and hard-seeded native is swelled with luscious juices, and yet has lost none of its peculiar high flavor which made this fruit a favorite even in its poorest condition. As the history of the Gregg has already been given in our pages, it is only necessary to say that it is a chance seedling found near Aurora, Ind., some fifteen years since, and has steadily made its way, and gained public favor, until, among all the more experienced, it is accorded the first place among the black-caps.

The stem with a cluster of fruit is a good sample of the berry in its wild condition. The difference in the size, as shown by the single berry at the right and the Gregg at the left, will be more obvious when we consider volume rather than diameter. By careful measurement these diameters are found to be in the ratio of 16 to 21, consequently, supposing the berries to be spheres, the volume of the larger will be nearly three times as great as the smaller one; in practical measurement by quarts, or the little boxes in which they are sent to market, this will hold true, and it is a wonderful increase in size.

The cultivation of the Raspberry is so simple that every family having a garden should raise the fruit in abundance. In the Northern States both the red and the black varieties will adapt themselves to ordinary garden soil. South of the latitude of New York the Red Raspberries are cultivated with more difficulty, and this appears

to be on account of too much heat in the soil. The trouble may be obviated in measure by mulching with hay, grass, saw-dust, or chip-manure, and, if possible, by giving the plants the advantage of the preference which they undoubtedly have for the heaviest soils.

The Black Caps are at home over a far wider



range of country, and are less particular about the character of the soil, preferring, however, the light rather than the heaviest soils. The wild Black Cap grows as far south as Georgia, and the improved varieties of it may be cultivated everywhere except in the extreme south.

In planting, the canes should be cut short, and the roots set about four or five feet apart each way, previously enriching the soil if poor. Good, clean culture is necessary. No fruit is to be expected the first year, but the canes that grow will fruit the following year.

Different means of support are provided for the canes, but the more common method is to use a strong stake to which to tie them. After fruiting, the canes that have borne are cut away. Particular details in the culture of this fruit, not here mentioned, are observed by good cultivators in order to obtain the best results.

CAPE JESSAMINE—RESURRECTION MOSS.

If the Cape Jessamine is planted in a rich loam, to which one-fourth coarse sand has been added, and kept moist, but not too wet, given a southern exposure, protected from the cold wind and frost, I have no doubt it would be its own beautiful, luxuriant self in Virginia, as it is in South Carolina, and give abundant bloom for six weeks in summer. I believe it is impossible to get a Cape Jessamine to live in a clay, or a fine, damp soil. In Georgia we have Cape Jessamine looking like a snow bank in May, then stray flowers until frost stops their budding and turns their leaves to yellow. We have three varieties in our yard—the common, the mammoth, and the dwarf. I think the latter the most charming of all, also the most suitable for a box plant.

I send you a plant which a lady sent me from Texas; it is a native of New Mexico. After being kept in a dry state for a year, if put in water, it will become green. Can you tell me if it can be successfully cultivated as a box plant?—MRS. E. F. B.



RESURRECTION MOSS.

The plant here referred to is what is known as the Resurrection Moss, *Selaginella lepidophylla*, and is quite a curiosity. The dried plants curl and roll themselves up together, and will remain in this condition indefinitely; when moistened, they spread themselves out, and the upper sides of the fronds that have been rolled in, exhibit a fresh, dark green color as in life.

When dried again they curl up as before, and so may be preserved. We have had no experience in cultivating it, and can give no information on that point.

We hope yet to hear from some of our readers in Virginia, and learn from them just how well Cape Jessamine is adapted to the different parts of that State.

RED ANTS IN FLOWER BEDS.

MR. VICK:—I am a new subscriber, but already I wish to be numbered with those who receive from you such valuable information. I had, last spring, a fine bed of Portulacas. They were thriving splendidly when, one day, I observed that they were not flowering as well as usual. I soon saw the cause; I found, near the roots of several of the plants, nests made by the small, red ant. I destroyed their house several times, but the troublesome little creatures would only move to a different plant. Can you give me any information on the subject? Can Portulaca be kept in pots, and be made to bloom during winter? Will you kindly let me know through the MAGAZINE?—B. A. T., *Mistletoe Vale, S. C.*

The best way to operate in a case like this, is to trap and destroy the ants. This can be done by taking some pieces of sponge with fine sugar sprinkled into the cavities, or some pieces of meat bones, and placing them near the ants' nests; when the ants gather on the pieces to feed, pick them up and drop them into a dish of hot water. By following up this practice for a short time, they may all be destroyed.

Portulaca in pots will bloom very freely in winter.

PROPAGATION OF SOME PLANTS.

MR. VICK:—Do root cuttings of Japan Quince require to be grafted to propagate them?

Does the Gladiolus come true to name?—A. N., *Plain City, Ohio.*

Root cuttings of the Japan Quince produce plants without grafting. Pieces of roots having been taken from plants in the fall and kept fresh in soil or sand, are made into small cuttings, about two inches in length, early in the winter, and strewn pretty thickly over the soil in a cutting box, and covered an inch or two deep. In this way they are kept in an even, low temperature in the greenhouse until they start and become established young plants. In the spring the plants are transferred to the open ground.

The Gladiolus come true from the bulb, not from the seed.

TRouble ENOUGH.—A correspondent of the *English Garden Illustrated* is full of trouble and seeks advice of the editor. His lawn is poor and needs rolling, but he cannot get a roller through the garden gate. The English fences and gates are fearfully and wonderfully made. We would advise taking the lawn out to the roller.

REPORT OF FLOWER CULTURE.

MR. VICK :—One year ago last April a friend gave me a slip of Wax Plant, *Hoya carnosa*, and told me to put it in my hot-bed, which I did. It was just a leaf, and I inserted the stem in the soil and left it to itself for about two months, when I took it up and potted it. It had rooted well, but showed no signs of growing upwards. I left it until autumn, when, as it had never changed the least in appearance, I again took it up and found it the same as when I first potted it, except that the root had grown a little. And though I have coaxed, petted, and worked, it has never sent up a single shoot nor shown the slightest inclination to grow. Would you please tell me what is wrong with it, and how I can make it grow?

I must tell you of my Calla Lily, which is rather an "odd genius." It flowered twice last spring, once during the summer in the open ground, and is now budded again. This last bud did not come up from the center, as it should, but started right from the base of the plant, on the outside, and has grown until it now stands above the tallest leaves.

I have had very good success with my flowers the past summer. My Cockscombs and Balsams, especially, were the wonder and admiration of every one. One old gentleman, pointing to the Balsams, asked what they were. "Why, those are Balsams," I answered. "Well," said he, "I never saw anything like them before for Balsams. They are nearly as large as Roses."

The MAGAZINE I find invaluable, and could not live without it.—N. F. B., *Foxboro, Ont.*

RAISING WATER LILIES FOR PROFIT.

Mr. GRAY, a skilful gardener, of Malden, Mass., is cultivating Water Lilies in quantity for their flowers. He raises them in a glass house originally intended for a Rose house, and which is partly devoted to its original use. On the front bench of the house are placed large and shallow earthen dishes, or pans, as close as they can stand, over the whole surface; the pans, which are about eighteen inches in diameter and five or six inches deep, contain half of their depth of soil, and are filled to the brim with water, and are not provided with holes or drainage. The Lilies grow in these pans, and apparently luxuriate there. The middle bed of the house is planted with Roses, except around its border, where more Lilies are growing; along the bed next the path are the shallow pans of Lilies, as on the bench opposite, and, on the back side, old plants of Water Lilies are growing in tubs. The kinds raised are the pink variety of *Nymphaea odorata*, *N. Devonensis*, *N.*

coerulea, *N. dentata*, and *N. flava*. Large quantities of flowers are produced in this manner, and find a ready market in Boston at profitable prices, with a growing demand.

GARDENING FOR PLEASURE.

A lady of seventy-eight years, in Iowa, writes that she made a garden herself, last year, although her neighbors all opposed her. She says: "The Corn I planted was very crooked, almost on a circle, but I had plenty and to spare." This year she promises herself to plant by a line. She was all day making preparations and sowing the seed of an Onion bed, "putting one seed in a place; my feet were asleep and I had to be helped into the house." Her husband, whom she calls father, "says I shall not work in the garden this year. I *will*, if I have to make my beds sitting in a rocking-chair. I have learned to have patience when I sow my Parsnip bed and, if the plants do not come up as soon as I think they should, I will not plant Cucumber seed among them again. It caused a battle, and the Cucumbers were victorious in overrunning and checking the Parsnips, notwithstanding, I had a bushel of nice Parsnips, and all the Cucumbers to pickle. I can hardly wait for spring to come."

CALIFORNIANS AMUSED.

We do not wonder that the people of California laugh at some of our descriptions of plants, for we have seen the Lupins and Collinsias almost as large as Oak trees, and Mangels about the size of a man. B. K. NORTON, of Alameda, writes: "In cultivating the Dahlia I allow but a single stock to grow, and that in this soil and climate frequently grows six feet in height, with a stalk two and a half inches in diameter, the whole plant perfectly ablaze with bloom from the first of July until November. I was amused at the description you give of some of the plants you offer for sale, and among others, of the size and peculiarities of the Lemon Verbena. We have one growing in our grounds which I pruned February 1st, and had to use a seven-foot stepladder to reach the top. It is fifteen years old, ten inches in diameter one foot above the base, and blooms twice in the summer—first in May and June, and the second time in August and September; in fact, it is hardly ever out of bloom during summer."

A WINTER IN OREGON.—A letter from Jacksonville, Oregon, dated February 21st, says: "We have had a most pleasant winter so far, and it looks as if spring had opened. Petunias are still green in the garden, and will bloom soon if this weather continues."

CARPET BEDDING.

A mass of flowers showing a sheet of bright colors captivates the sight and commands our admiration. It is not our present purpose to enquire in relation to the comparative merits of different methods of arranging plants. Admitting that the lover of nature can see much more to interest him in a well-developed single plant than in a compact mass of plants, it is a sufficient reply to say, that bright colors, in definite and artistic forms, produce a natural gratification. In seeking to please the greatest number, the probability is that plants can be arranged in no other way so effectively as that known as carpet-bedding; consequently, as the saying is, this is something that has come to stay with us, and we may as well acquaint ourselves with it and make such use of it as we may deem proper. Although, from time to time, for several years, we have published diagrams of carpet beds, still there is a constant inquiry for more. In our last issue several good designs were shown. No one should adopt designs and adhere to them year after year; after a little experience in planting a few beds, it will be found far more satisfactory to originate designs for one's self, and the training thus secured in the harmony of colors will be found of advantage in many affairs of management, such as dress, furniture, buildings, and many others. But let us guard against carrying this style of garden ornamentation to an extreme in any way; either by attempting what is too expensive, or by the lavish use of it, making it worse than childish, positively senseless; or by snobbery, in sending to Europe for the latest designs of fancy, garden artists. Let us keep in mind in all our attempts to please, the improvement of ourselves, our neighbors, our friends. A great amount of skill may be exhibited on a very small space; some of the rarest paintings are gems, small in size but wonderful in detail and color. So a small extent of lawn or garden may show a specimen of bedding of great skill, while a large place may only the more effectually display a vulgar attempt.

The forms of a variety of beds are shown on the opposite page, and the planting of them will be readily understood by reference to the following list of the plants which they contained. The names of the plants that occupied the spaces marked A, B, C, &c., in the different designs stand opposite the corresponding letters in this list. The plants were set from eight to twelve inches apart, according to their nature.

Fig. 1. A, *Achyranthes Lindenii*; B, *A. Casei*; C, *A. Hoveyi*.

Fig. 2. A, White Geranium; B, Red Geranium.

Fig. 3. A, *Coleus Verschafeltii*; B, C. Shah.

Fig. 4. A, *Centaurea gymnocarpa*; B, *Coleus Hero*; C, *Abutilon Thompsonii*.

Fig. 5. A, Silver-leaf Geranium; B, White-flowered Geranium; C, Scarlet Geranium.

Fig. 6. A, Mixed Verbenas; B, *Coleus Hero*; C, Striped Petunia; D, *Caladium*; E, *Ricinus*.

Fig. 7. A, Scarlet Phlox; B, White Phlox.

Fig. 8. A, Beauty of Calderdale Geranium; B, Scarlet Geranium; C, *Canna*.

Fig. 9. A, Mountain of Snow Geranium; B, Scarlet Geranium; C, *Caladium*.

Fig. 10. A, Bronze Geranium; B, White Phlox; C, Purple Phlox.

Fig. 11. A, White Verbena; B, Scarlet Verbena; C, Blue Heliotrope.

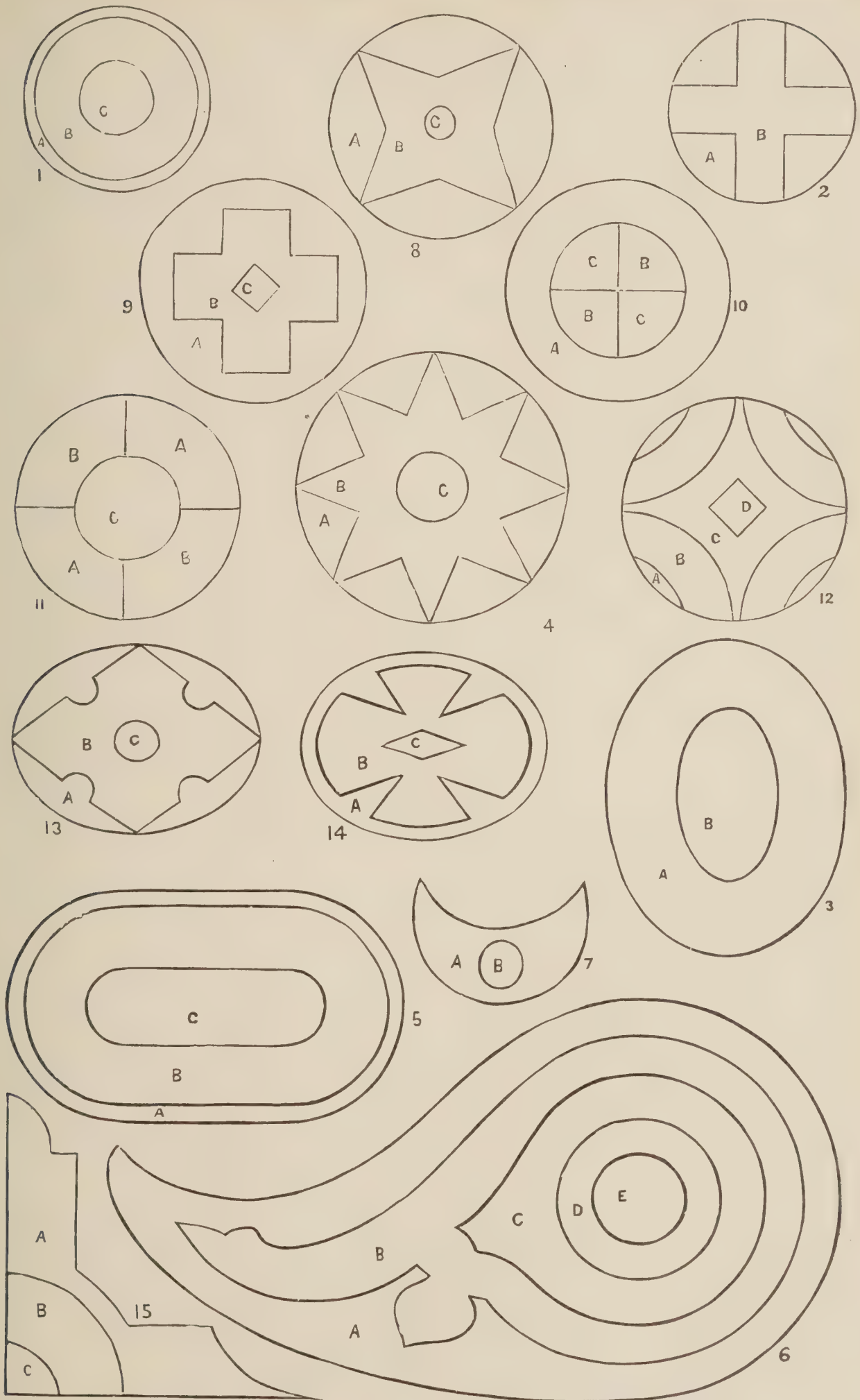
Fig. 12. A, Blue Lobelia; B, Scarlet Verbena; C, Striped Petunia.

Fig. 13. A, *Alternanthera*; B, Blue Lobelia; C, Queen of the West Geranium.

Fig. 14. A, Golden Feverfew; B, Scarlet Phlox; C, *Glaucium*.

Fig. 15. In laying out this figure for a corner bed, either termination can be used, or both, as represented. This design can also be utilized for a central bed, of which it would form a quarter section. The bed can be filled to advantage with the following flowers: A, White Alyssum; B, Mignonette; C, Feathered Celosia.

Most of the designs here presented were exhibited last year on the grounds of the Willard Asylum for the Insane. This institution is beautifully situated on the east shore of Seneca Lake, and has connected with it several hundred acres of land, used principally for farming and gardening purposes. A distinguishing feature of the establishment is the number of domiciles for the patients. Although the principal building is a handsome, large and substantial structure of cut stone, there are several smaller brick buildings that accommodate about one hundred persons each; these buildings are separate from each other by a few hundred or a thousand feet, and the grounds about which they stand, probably fifty or seventy-five acres in extent, are planted with trees and shrubs, and otherwise made ornamental. The beds of flowers and handsome foliage-plants about the different buildings added greatly to the beauty of the grounds. Nor was the beauty sensible only to the officers and attendants and the visitors of the place; the patients themselves were, probably, the most interested observers. Every operation of planting was watched by them with keenest enjoyment, and whoever saw the satisfaction with which they surveyed the beds, would be assured that the cost of them was a sum well expended. As the patients are allowed the freedom of the grounds several times



each day, they had ample opportunity to visit every part. The enterprise of Dr. CHAPIN, the Superintendent, and the attentive watchfulness of Captain GILBERT, Steward, in proposing and executing this improvement are to be commended, and should be regarded as examples by the authorities of similar institutions. It should be remembered that many, or most, of the unfortunate inmates of these asylums have been accustomed to the comforts of life, and not a few of them to the refinements. The groves of forest trees that are growing upon some parts of the grounds at Willard are lighted up underneath by the native wild flowers; these the patients watch and examine, and we frequently recall with pleasure a conversation held, while strolling about the grounds with some of them, in response to their eager inquiries in regard to the botanical relationships and characteristics of some of the wildings that were in bloom at the time of our visit.

Why may not more use be made of flowers in our prisons?

Bring flowers to the captive's lonely cell,
They have tales of the joyous woods to tell;
Of the free, blue streams, and the glowing sky,
And the bright world shut from his languid eye;
They will bear him a thought of the sunny hours,
And a dream of his youth—bring flowers, wild flowers.

A NEW AND REMARKABLE SILK-WEED.

A very remarkable species of Silk-weed, or Milk-weed, has been discovered, in Arizona, by EDWARD L. GREEN, of Silver City, N. M., a description of which he gives in the *Bulletin of the Torrey Botanical Club*. This plant is so entirely different from any of the common forms of the Silk-weed familiar to most of our readers, the following account of it by the discoverer will be of interest:

"In the early days of September, 1880, while enjoying a botanical excursion among the San Francisco Mountains, in the extreme eastern part of Arizona, I noticed growing among the rocks, under the Pine trees, clumps of a bush which I should certainly have passed by as mere Pine bushes, but for the fact that they bore, toward the extremities of their pine-leaved branches, the follicles of a Silk-weed. I gathered into my portfolio a goodly number of these follicle-bearing branches, on one of which I was glad to notice a few undeveloped and withered flower-buds. Carefully preserving these, I afterwards soaked them out and found this remarkable shrub to be a genuine *Asclepias*. On revisiting the locality, on the first day of November, I was surprised to find the bushes enjoying a second season of flowering. The species appears to be most nearly related to *A. Linaria*, Cav., of Central and Southern Mexico;

but it differs from that altogether, in floral character, as also in habit, being wholly shrubby and strictly evergreen, and the leaves persisting, as in many Pines, until the autumn of the second year. In November, 1880, the leaves which had put forth in the spring of 1879 were yellow and ready to fall; all the rest were bright and firmly persistent. The woody stems, even to near the base, bear the scars of the fallen foliage of preceding years, just as do the branches of Pines. The half-hardened wood of the present year's growth has the milky juice of the genus in general; but it is not found in the older wood."

The name given to this plant is *Asclepias pinifolia*, or Pine-leaved *Asclepias*. The leaves at a little distance appear like Pine leaves, being very narrow and about an inch in length, and ending in a sharp, callous point.

THE SEED-BED.

The time has now arrived when, in any part of the country, seed-sowing for tender plants can be no longer delayed; yet, by immediate attention there is time for almost anything. Two very common causes of the failure of delicate seeds to germinate are, having them in places too cold and damp, and allowing the soil in which they are sown to become very dry, and then watering and allowing it to dry again, thus, by successive alternations of wet and drought, the germs or the plantlets are destroyed; the latter result often occurs with those having suitable appliances for successful work, for negligent attention of the hot-bed or cold-frame will be very apt to secure this condition of things. The soil may be kept moist by shading with some thin material, such as paper, cotton cloth, or the clippings of grass.

TO KILL WORMS.—Tell your correspondents who are troubling themselves about "white worms," or any other worms, in pots, to stick three or four common matches down into the soil, also one or two up into the drain opening. The phosphorus on the match is certain death to animal life, and at the same time is the most powerful of all fertilizers for plants. No one after trying this simple remedy will use any other.—E. H., *LeRoy, N. Y.*

WHITE WORMS IN POT SOIL.—I see a lady wishes to know what to do for those small, white worms that come upon the top of the soil when she waters her plants. I take two parts of soot and one part of wood-ashes and mix them together, and then, having stirred the soil, I sprinkle the mixture thinly over it, and the next day I water it.—Mrs. R. B. L., *South Amherst, O.*

THE FRANKLIN SUGAR-BEET FACTORY.

As most of our readers are aware, a very complete and well-appointed factory for the manufacture of sugar from Beets has been established at Franklin, Mass. The factory commenced active operations late last fall, after a long delay in its completion, and this delay proved a serious disadvantage. The cost of the building and equipment has been much more than the amount estimated; there were various unforeseen difficulties, and according to the report of the company, if all the obstacles the company has had to contend against had been visible at the outset, it is doubtless if the enterprise would have reached its present position. But with so many obstacles overcome, with so good a factory, thoroughly built, and in good running order, and with such a fund of valuable experience, accumulated in every department, from the sprouting seed on the farm to the sweet crystals at the market, there is certainly now a demand for persistent, earnest work."

The factory worked up last fall 3321 tons of Beets, of 2240 pounds to the ton. The produce was 235 tons of sugar and 180 hogsheads of syrup; from this stock \$21,000 worth had been sold, and there was on hand \$15,000 or \$16,000 worth more. The cost of the Beets and the expense of manufacture left but a few cents profit on each ton, but the expenses were greater on this lot than will ordinarily be the case, and the directors report that there is good margin for profit after paying \$6 a ton for Beets, if the supply is sufficient to keep the mill employed a reasonable length of time. The results of the Franklin factory will hereafter be regarded with interest.

With the capital, enterprise and skill now enlisted in sugar manufactories from Sorghum, Corn-stalks, and Beets, we may soon be able to allude to our loved country in language as literally truthful as patriotic, as the "Sweet land of liberty."

EVERGREENS FOR THE NORTHWEST.—ROBT DOUGLASS, of Waukegan, Ill., who has had more experience, and whose authority on this subject is more valuable than that of any other person in this country, recommends the following named evergreens for their hardiness and suitableness for the northwest: *Abies Siberica*, syn. *A. pichta*, *Pinus cembra*, *Abies Schrenkiana*, *Abies alba* or White Spruce, Norway Spruce, Menzie's Spruce, *Pinus metis*, *Pinus Balfouriana*, *Pinus flexilis*, *Pinus contorta*, and *Pinus ponderosa*. Of these the Menzie's Spruce and the five kinds of Pine last named are from Colorado.

INSECTS AND VERMIN.

The *Chemist* says that, if a little chloride of lime be sprinkled on the soil, rats, mice, and insects will soon desert it. Plants may be easily protected by it from insect plagues, by simply brushing over their stems with a solution of it. It has often been noticed that a patch which has been treated in this way remains free from grubs, while the unprotected beds round about are literally devastated. Fruit trees may be guarded from their attacks by attaching to the stems pieces of tow smeared with a mixture of chloride of lime and hog's lard. Ants and grubs already in possession will then rapidly vacate their positions.

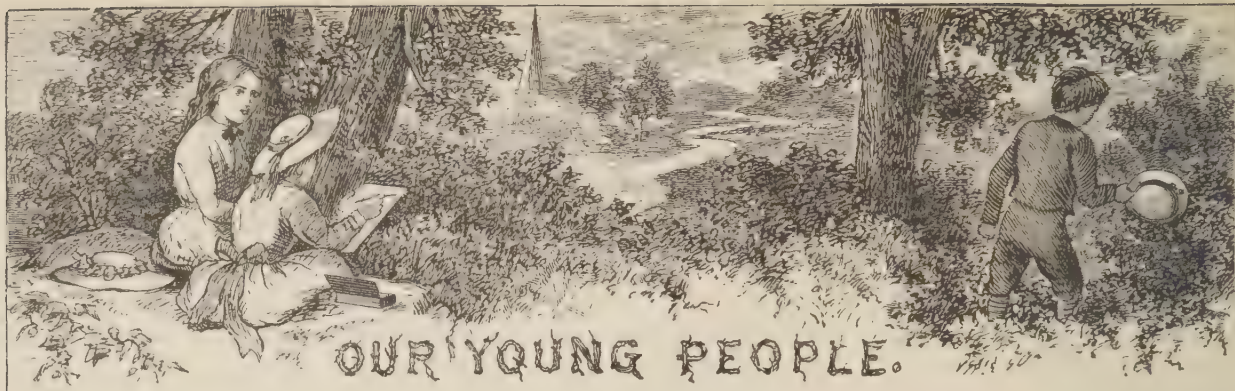
DEATH OF DR. WOOD, THE BOTANIST.

Dr. ALPHONSO WOOD, whose botanical writings are so well known, died at his home, at West Farms, N. Y., on the fourth of last January, in the seventy-first year of his age. No author of botanical works in this country has had the happy faculty of presenting his subjects in so lucid and popular a style as the late Dr. WOOD; his aim, from first to last, was to present his ideas in a simple and attractive style, and he so fully succeeded in this purpose, that thousands have been indebted to him for the pursuit of the gentle science who, otherwise, would, doubtless, never have given it their attention; by these his memory is blessed.

THE PHYLLOXERA AND IRON.—California horticulturists are testing iron in the soil as a preventive or remedy for phylloxera. Red lands, or those containing a considerable amount of iron oxide, are represented as far more conducive to the growth of vines than other soils. Conclusive tests, by the application of iron to affected vineyards, will probably be made the present season.

WINTER FLOWERS.—Mrs. JOHNSON, of Larabee, Pa., is delighted with the blooming of her Holland bulbs. "One Double White Hyacinth, with fifty perfect, large bells, and Prince of Waterloo and M. Talleyrand, with bells larger than Tuberosa flowers. *Gloriosum superbum* Narcissus had sixteen flowers on one stalk."

DELPHINIUM FORMOSUM.—I want to say a single word for the *Delphinium formosum*. I got a packet of seed last spring, not expecting them to bloom until this coming season; but, to my surprise, they produced a most beautiful display of flowers. I think this variety one of the most desirable flowers to grow in this severe climate.—R. K., *Shellsburg, Iowa*.



HARRY BLAKE'S MARINE AQUARIUM.

On a certain Friday evening, after school, Harry's sister, Grace, informed him that a little party of four was coming next day to see his salt-water aquarium. So they talked over and planned how they would show up its most interesting points to the best advantage.

The next day Stella and Tom, Fanny and Frank were shown into a beautiful room where a pale boy sat in a wheeled chair, with his poor, useless limbs screened by a Turkish lap-robe inwoven with many curious designs. Near him stood a revolving table, whose top was furnished underneath with drawers containing his treasures. On the table were his writing and drawing materials and his favorite books, which were mostly those relating to natural history. Near the windows were his aquaria. Tom noticed that the fresh-water one had several things in it not in his own. But it was to the salt-water tank that all eyes were soon turned. Harry, observing this, modestly remarked that, as he could never go to the sea-coast, some of his friends had arranged to have a bit of the ocean brought to him, and his father had managed the rest. Then, taking a covered box from the table, he wheeled his chair toward the large tank, and all were soon gathered around it. But instantly they saw some fan-like gills suddenly furled, and pop went some scarlet heads back into their twisted, shelly tubes. These were attached in a cluster to an old, empty shell. As soon as the heads disappeared each one drew in after him a conical body attached to a stem, which he used as a stopper to shut himself in. A little storm of exclamations followed this performance, and Tom inquired at once if this was the last they should see of the funny fellows, and asked their name. Harry replied that they were one kind of *Serpula*, and that they are said to be less shy after a time, so that nothing short of a blow on the tank will disturb the serene display they make of their gorgeous heads, waving fans and floating stoppers.

Stella could do nothing but stand with clasped

hands and say "Oh! oh!" half under her breath; already her eyes were fixed upon some beautifully-tinted, plant-like formations, which looked like open flowers supported by long stems, with a base beneath clinging to something for anchorage. She tried to recall what she had read of sea-anemones, but was too excited to venture a remark. Fanny, however, inquired what kind of plants they were, and Harry, to apologize for seeming wiser than the rest, said, flushing a little,

"You know I've nothing to do but read and study, and I've learned that these formations belong to a class of animal plants called zoophytes. There are many varieties, and this particular kind is called the sea-anemone, from its resemblance to a flower of that name. Even of these, I have read of ten different kinds that are found in our American waters. The two sorts that I have were gathered from the stones, shells and fragments of brick found among the refuse left by fishermen raking for oysters in New York bay. You can notice that one variety is a bright salmon color marbled with brown, and the other is white marbled with gray."

Frank now found his tongue, and exclaimed, "Well—but you don't pretend to say that these flower-things have any animal about them?"

"Perhaps we can get one of them to eat," he quietly answered, opening the box on his lap.

"Eat!" exclaimed Frank; "Eat!" echoed Tom, "where's any mouth, or head, or stomach I'd like to know."

Harry now took from his box a bit of raw meat the size of a small Bean and dropped it over the largest anemone. Very soon the fringe-like fingers, or tentacles, which seem to form the full-blown flower, began to reach for it, and finally grasping it, gradually pressed it through an orifice in the center down into the stem, or stomach."

A stifled "Oh!" came from Stella as she saw the meat disappear, while Fanny declared that she could believe anything after this. Tom

gave a long, low whistle, and Frank persisted that this was more of a sight than to see a show-man pretend to swallow a dirk. Then Harry took a small net from the box and carefully lifted one of the sea-flowers above the water. As soon as it was touched the flower closed and the whole thing shrank into a shapeless mass.

But the time was passing and there was much yet to see, though we can only speak in detail of a few items. Grace had been patiently waiting for an opportunity to show the girls a Spider-crab, that always kept itself decorated with bits of sea-weed. Just now it had a small bit on the top of its head and two streamers on its back. In a day or two these would be changed for another kind, though they could never catch it making its toilet, nor discover its dressing room. Then Harry said,

"Now I want to show you my favorite crab. He is called a hermit; but why, I cannot tell you, for he roves around continually with a borrowed shell on his back, climbing and tumbling down again, and repeating the same performance as though he thought it great fun. You see that this one looks as though he was getting too big for his shell; now I'll drop this one in near him and see if he will not change his home." Sure enough, in a few moments he thrust his two claws into the empty shell to learn if it were occupied. Then erecting his tail stiff in the air he flopped himself into the cavity with a backward movement that was as swift as it was marvellous, and then looked saucily out of his new home, as though he would ask if anybody could move and get settled quicker than that!

But there was still so much to look at, their eyes took in greedily the various things not yet examined. There were numbers of the agile hair-shrimps, nearly transparent and very beautiful. Golden Carp and black-nosed Dace were gliding in and out the little covers formed by the shells and corals grouped in the center. The slow-paced winkles were creeping about attending to their house-cleaning. Sea-weeds and mosses of different kinds aerated the water and kept the animal life supplied with oxygen when submerged.

Before the party left, Tom shyly inquired of Harry if it were a secret as to how he secured such a large supply of sea-water. Harry immediately took from a drawer a printed formula, which he copied, and while so doing, we'll look over his shoulder and copy also "Mr. Gosse's recipe for artificial sea-water:

Common table salt . . .	3½ oz.	or 81 parts
Epsom salts	¼ "	" 7 "
Chloride of magnesium . . .	200 grs. Troy	" 10 "
Chloride of potassium . . .	40 "	" 2 "

One pound of this mixture will make three gallons of sea-water. To be dissolved in an earthen vessel and stand for a week before being poured off into a tank. Specific gravity must not be less than 1.026, nor greater than 1.028."

Harry gave this to Tom, and told him that the things to stock his tank came in cans lined with sea-weed and perforated to admit air.

As they left, Tom said, "Not yet—but some-time I'll have one, too."—AUNT MARJORIE.

GNAPHALIUM LEONTOPODIUM.

Upon the Alps grows a plant known to the Germans as the Edelweiss, or White Jewel. It is the subject of an endless amount of tender and romantic sentiment, and in some districts is the most highly prized gift of a lover to a maiden. As it often grows in places that are difficult and dangerous of access, it is a common sentiment of lovers that to procure it indicates the metal and courage, "clear grit," that



a youth should be possessed of who dares to make so bold a venture as matrimony. Recent travelers tell us that the comparative inaccessibility of the plant is a myth or delusion held by the devotees of the blind goddess, and due to their temporary imperfect vision, as in many places the plants are found common enough, in elevated places on the Alps, along the roadways and paths. Such is the passion for gathering the plants that there has been danger of its extermination, and, in some cantons, laws have been passed to protect it, with heavy penalties in case of violation. A young lady not a thousand miles from this place was the recipient of one of these flowers from a gentleman of her acquaintance who was traveling in Europe. Not knowing the significance of the gift, it met

with no response, and thus parted two streams that might otherwise have blessed the desert of life by their confluence. The "little faded flower," the value of which was afterwards learned, was preserved, and it hangs, on a background of black velvet, in a frame upon the wall, a sacred relic and life-long memento of what "might have been."

Innumerable stories and incidents are connected with the Edelweiss, and it appears to incite to tales of various kinds, according to the mental moods of those under its spell.

Our readers will understand the character of this plant better when we inform them that it is a near relative, botanically, to the Cudweed, or everlasting that grows commonly in old pastures, and lanes, and on the roadsides, and elsewhere. The surface of the leaves is covered with whitish hairs, giving them a grayish appearance. The plant grows from six to nine inches high, furnished with a few narrow leaves along the stem, and bears at its summit a cluster of heads of flowers, which is surrounded by a number of whitish, wooly bracts that expand into a somewhat star-shaped form characteristic of the plant. Though dear to the German heart, it cannot be so on account of its superior beauty; still, we think a lover of nature could not help admiring it, especially as seen growing on its native soil. It is said not to be difficult to raise in a well-drained soil, and where not exposed to too great heat.

THE STORY OF THE EDELWEISS.

On one the hand of misfortune fell,
And they led him away to a prison cell.

He met in the street a little child,
And she looked up in his face and smiled.

She saw that to prison his pathway led,
And "God be with you," she softly said.

"God!" with a scornful laugh cried he;
"Who is this God that we never see?"

"There is none. Yet you believe as true
This tale they have told. Well, I pity you."

"I need no pity," she bravely said;
"'Tis you who have need of mine instead,

"For a dreary life and a desolate heart
Is that in which God can have no part."

She took from her basket a little flower;
"It may seem like a friend in a lonely hour,"

And she put in his hand an Edelweiss
She had dug that day under mountain skies.

The prisoner faced his cell of stone
But somehow he seemed not to be alone.

In the grated window his Edelweiss
Turned ever its face to the far-off skies,

Reached out to the sunshine its little hands,
And longed for the air of the mountain-lands.

He watched the leaves of the plant unfold,
And this is the story the Edelweiss told:

"There is God on the hills where my life began,
The God of the flower, and the God of man.

"He gave us life, and we live because
He rules all things with his changeless laws.

"He is here with us in this prison cell.
Oh, this dear God loveth his own so well!

"Ever I turn to the wide, free skies,
So near to the home of the Edelweiss,

"And ever I long for the cool, sweet air
That blew like a blessing about me there;

"So a longing stirs in your breast alway
For the heart's true home on the hills of day.

"Blows round you sometimes in ways of earth,
The airs of the land where your soul had birth."

"Can a flower be wiser than man?" cried he;
"Has this brought a message from God to me?"

Then he bowed his face on his hands and said:
"God of the living, and God of the dead,

"God of this flower, and God of me,
Lead me out of my darkness up to thee."

He felt his doubts and his yearnings cease;
His heart was flooded with sudden peace.

"There is a God!" and his face was bright,
And his heart, like the Edelweiss, turned to the light.

When they opened the door of his cell, one day,
And said he was free to go his way,

He bore with him from his prison cell
The flower that had lived its mission well.

"Your God and mine is the same," said he;
"You shall share the freedom that comes to me."

And back to the hills, and its own dear skies,
He tenderly bore the Edelweiss.

And he knelt to kiss the flower, and say
These good-bye words, ere he went his way:

"You have led me from darkness into the light,"
And the heart of the flower was glad that night.

—EBEN E. REXFORD.

HOW WAS IT?

Children, listen! Once on a time a costly Lily-bulb from Japan was planted with the greatest care. All the summer passed and it never came up long enough to say "Thank you" for the anxious thought spent upon it. The next spring, some little, toddling feet stole away unseen one day after a warm shower, and the following day the owner of the bulb saw a deeply-imbedded baby foot-print where she had planted the bulb, and lo! right in the center was peeping up its green shoot. And so,

Would you think me very silly
If I venture just a hint,
That the foot-print formed the Lily,
Or the Lily sought the print?

Yes, sought it; because in such a precious setting it might feel safer under these strange, foreign skies, and perhaps the brownies may have suggested that

There's a magic charm pertaining
To a baby-foot, perchance,
That, to grow in such a framing,
Might its loveliness enhance.

But if you can't believe that Lilies seek baby

foot-prints to grow in, perhaps you'll like the first suggestion better, for in some of your readings you'll find that

Poets say that lovely ladies
Scarce can step but flowers will spring;
Then why can't the darling babies
Cause the same miraculous thing?

But if you still insist that every plant must be formed by a bulb, or tuber, or off-shoot, or cutting, or seed, I suppose I must yield the point.
—PROXY.

A TRUE SKETCH.

The love of flowers is often, I may say generally, found in refined females. It is more rarely a prominent quality in men, but if so it is always allied to other refined and noble qualities. I have in my memory a complete illustration of this truth in the life of an old gentleman friend of my youth. Left a childless widower in his old age, without even the companionship of a near relative, one would suppose that existence would almost have been a burden to him. 'Tis true that his house had another inmate to whom he was strongly attached—a stepson, a gentleman of highly cultivated mind, but one whose greatest delight was to seclude himself from human society and to devote himself to his books and papers.

Thus left to his own resources, our aged friend found great pleasure in the cultivation of choice flowers and plants, especially Roses. Many varieties of fine Roses were to be found in his old-fashioned garden, and many of his lady friends were the recipients of large basketsful of these beautiful flowers.

Being once asked to choose a name for an infant, a wee girl, he selected the name of a favorite Rose, the Emma Dampiere, and by this name was the babe called. But flowers alone were not sufficient to fill the heart of this kind old man. Pets of different kinds shared his bounty and gave him pleasure. Of dogs and birds he had many, and I well remember the delight with which I would gaze through the wire netting at the large number of Canary-birds domesticated in his aviary. But of all the creatures that awakened an interest in the heart of our aged friend, none found so warm a corner as poor, fatherless children. For several years ten fatherless little girls, whose mothers were too poor to educate them, were sent to school to a lady whom he thought best qualified to impart the necessary instruction. Their kind friend not only paid for their education, but kept a watchful eye over them, ever ready to befriend in any way.

Loving the company of children, he would often have them gather at his dwelling, and when there, they would be regaled with dainties

and presented with flowers and fruit in abundance. Always during the Christmas holidays they would be invited to partake of a feast of good things set out promiscuously on a long table, and, after having eaten all they desired, he would put up for each little guest a bundle of the cakes, nuts, &c., to carry home, giving good advice all the while he was tying up the packages. That done, he would finish by presenting a gift in money to each child, telling her to purchase with it a pair of good, warm shoes for herself.

After living to a good old age, our worthy friend left the bulk of his fortune, which was considerable, for the benefit of orphan children. His large, old house, with its fine old garden, was to be their home until such time as the trustees appointed to manage the property should deem it expedient to erect for them a more commodious dwelling. For several years the old house was occupied by the children and those who attended to their welfare.

Nearly nine years ago, my husband and myself, being in the City of Augusta, walked one beautiful April morning to visit this Orphans' Home. I have never seen it since, but the picture remains with me as bright as ever. In the parlor a large portrait of the kind old friend seemed to look with benevolent smile upon us, vividly bringing to mind the many visits paid to him in my youth. After resting in the parlor a while with the dignified matron, we strolled into the garden. It had been by no means neglected, and thousands of Roses bloomed in their beauty, and filled the air with their fragrance. Many other bright and beautiful flowers conspired to make the old garden gay, and I cannot ever remember seeing a more attractive one. Besides the ordinary plants, were others not so often seen. A large Camellia tree, Chinese Magnolias and Banana trees I remember were growing in the open air, blooming finely, I was told, in their proper seasons. In a yard back of the house were three or four fine Pecan trees, planted by the founder late in life. Some laughed at him and said, "You will never get any nuts from those trees." "Somebody will," he replied, in the spirit of true philanthropy. But for several years before his death, he gathered a good harvest of nuts, which he gave away to his young friends; and after his death the children of his bounty rejoiced to gather them.

At the death of the stepson above mentioned, the institution was further enriched by a large sum bequeathed by him, and now, on the outskirts of the city, surrounded by beautiful grounds, laid out and kept with the greatest care, a large, handsome edifice stands—a noble

monument to the benevolence of this kind old man and his son.

A beautiful tribute to the memory of these two is annually paid by the children. A certain day in spring, the children, laden with flowers, pay a visit to the cemetery where lie the remains of their benefactors, and assemble around the graves, singing sweet songs and strewing the graves with their flowers. Then, after listening to an address by some prominent citizen, the children return to the home provided for them and partake of a feast of strawberries.

I have been told that the old place has been sold. The most of the choice plants, however, were removed to the new grounds.—SIDNEY EMMETT.

WHAT BOYS AND GIRLS MAY DO.

The people of other countries, and especially those of England, and France, and Germany, want our wild plants. They send here for them, and when they can obtain the seeds, or the bulbs, or the young plants, they tend them carefully, and often find some beauty about them that makes them worth keeping. A great many of our wild plants that we never think of cultivating, have very nice places prepared for them on the other side of the great ocean, and are highly prized. It is a fact that people do not usually prize those things that they obtain at home as much as others that come from a distance; but we ought to take care of all the handsome plants of our own country, since we are so anxious to have those that come from abroad. How great a number of beautiful wild plants the young readers of this MAGAZINE see! Only think of them from Maine to Florida, from the Atlantic to the Pacific, from Texas to Canada! Suppose every boy and girl who reads what we are now writing should each decide to transplant at least one pretty wild plant from the spot where it is found to the garden, or the orchard, or the fence-side, according as the plant may be best suited, what a great number there would be. Then, next fall, or next winter, each one could write to us and tell us all about it. A memorandum should be kept of time the plant was moved, and what kind of a place it was found in, and where it was placed, how it was cared for, and how it succeeded. We can tell pretty well how a plant ought to be managed when we know what kind of a place it lives in naturally; so when we take a plant from its own home we should look pretty sharp to see if it is shady or sunny, if the soil is dry or moist, if it grows under the shade of trees or out in the open ground; but some plants will grow very well in different kinds of

places, and, therefore, it is best to look about and see if all the plants of that sort grow in the same kind of places, or whether they are not very particular about a place. Perhaps some will press some of the plants and flowers, and thus preserve them, and others may make drawings of them, so as to be able to tell all about them in every part.

PREMIUMS.

Some of our friends have suggested that we offer premiums for obtaining subscribers. As a slight compensation to those who labor among their neighbors in getting up clubs, we propose to give one of our FLORAL CHROMOS, on paper, to every one who sends us a club of *Five Subscribers*; and for *Twelve Subscribers* one of our CHROMOS ON CLOTH AND STRETCHER, both sent postage free. To any person sending us *Twenty Subscribers* we will forward by express, expressage paid by us, one of our FLORAL CHROMOS NICELY FRAMED IN WALNUT AND GILT. All to be at club rates—\$1 each.

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